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Hawaii's Health Risk Behaviors

1988

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State of Hawaii

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Hawaii's Health Risk Behaviors

1988

Results of a statewide telephone survey of adult residents.

- ❑ *Seatbelt Use*
- ❑ *High Blood Pressure*
- ❑ *Exercise*
- ❑ *Preventive Health Practices*
- ❑ *Weight & Diet*
- ❑ *Tobacco Use*
- ❑ *Alcohol Use*

Hawaii State Department of Health
Health Promotion & Education Branch

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ALOHA FROM THE DIRECTOR

The Hawaii State Department of Health is pleased to present the results of our third annual report documenting the health habits and behaviors of the Hawaii adult resident population.

The Behavioral Risk Factor Survey is an ongoing statewide telephone survey of adult residents, 18 years of age and over. The survey determines the prevalence of those health risk factors which increases a person's risk of injury, death, or illness. Hawaii was one of 38 states funded and supported by the Centers for Disease Control to administer the monthly surveys.

This effort represents a continuing attempt by the Health Department to gather information in identifying, targeting, and monitoring potential health problems of Hawaii residents. The information will allow the state to identify high risk groups, define prevalence estimates for the risk factors, and track temporal trends in rates.

It is my hope that the Behavioral Risk Factor Survey and surveillance data presented will provide a resource to guide the state and local disease prevention efforts in facing the health challenges that threaten the well being of Hawaii's people.

Very truly yours,

John C. Lewin, M.D.
Director of Health

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EXECUTIVE SUMMARY

The Hawaii State Department of Health has been participating in the Behavioral Risk Factor Surveillance System (BRFSS) since March 1986. The BRFSS is a national effort coordinated by the Centers for Disease Control to gather state specific data on health risk behaviors through monthly telephone interviews with randomly selected adult residents. The health risk behaviors surveyed are major contributors to illness, disability and premature death. One thousand eight hundred and sixty-five (1865) interviews were completed over a 12-month period from January through December, 1988.

A summary of the 1988 survey results is presented in this section.

Tables 1 and 2 with risk factor data for the state and by island are provided at the end of the summary.

Seatbelt Nonuse

An estimated six percent of Hawaii's adult population sometimes, seldom, or never used seatbelts while driving or riding in a car. This figure, the lowest percentage of the 38 states participating in the 1988 BRFSS, indicates continued high compliance to Hawaii's seatbelt law.

Demographic variables found to be significant for seatbelt nonuse included island, sex, race, and marital status.

Hypertension

Over fifteen percent of Hawaii's adults reported having hypertension, with over three-fourths of them having been prescribed medication to treat their hypertension.

Demographic variables which were found to be significant for hypertension were island, age, race, education, employment status, marital status, and household income.

Exercise

More than half of all adults in Hawaii (54.1%) had a sedentary lifestyle. Only ten percent of Hawaii's adults participated regularly in appropriate aerobic exercise, falling far short of the Hawaii 1990 Objectives which seek to increase this figure to 60%. For those people who exercised, the top five activities included walking, gardening, jogging/running, swimming and aerobics.

Statistically significant differences in sedentary lifestyle were found in the following demographic variables: sex, race, education, and employment status.

Overweight

The prevalence of overweight adults in Hawaii was nineteen percent, twenty-one percent for men and eighteen percent for women. Over three-fourths of all overweight adults in Hawaii reported that they were trying to lose weight.

Demographic variables which were found to be significant for overweight were island, sex, age, race, education, and household income.

Cigarette Smoking

Twenty-three percent of the adult population reported being current cigarette smokers: fifty percent smoked less than one pack a day; forty-two percent smoked one to two packs; and six percent smoked more than two packs a day.

Demographic variables which were found to be significant for current smoking were: sex, age, race, education, employment status, marital status and household income.

Smokeless Tobacco

The prevalence of smokeless tobacco use among adults in Hawaii was less than one percent (0.7%).

Acute or Binge Drinking

The prevalence of acute drinking in Hawaii was twenty percent. Acute drinking was about three times more likely to occur among males than females. The percentage of adults who reported acute drinking decreased with age.

Demographic variables which were found to be significant for acute drinking were sex, age, race, education, employment status, marital status, and household income.

Chronic Drinking

In 1988, nine percent of Hawaii's adults reported chronic drinking. The percentage of chronic drinking was more than six times greater for men than for women.

Demographic variables which were found to have significant differences in the prevalence of chronic drinking were sex, race, employment status, and marital status.

Drinking and Driving

In Hawaii, four percent of adults reported driving after having too much to drink, one or more times during the past month. The percentage of drinking and driving was five times higher for men than for women.

Demographic variables which were found to be significant for drinking and driving were: island, sex, age, race, employment status, and marital status.

Cholesterol

Almost half (47.5%) of Hawaii's adult population reported having had their cholesterol tested. Twenty-eight percent of Hawaii's adults reported that they had been told their cholesterol level. However, only about thirteen percent of all adults in Hawaii were able to provide a value for their cholesterol level.

Routine Checkups

Overall, 70.4% of Hawaii's adult population had a routine checkup within the past year. Statistically significant differences by sex, age and race were found according to when the routine checkup was performed.

Diabetes

Overall, 6.7% of the respondents reported having ever been told by a doctor that they have diabetes. Statistically significant associations were found in the following demographic variables: island, sex, age and race.

Table 1

Number and Percent of Adult Hawaii Population at Increased Risk for Morbidity and Mortality from Various Behavioral Risk Factors for 1988

Risk Factors	Number (Estimated)	Percent (Estimated)
Seatbelt Nonuse[1]	42,685	6.4
Hypertension[2]	102,635	15.3
Sedentary Lifestyle[3]	363,737	54.1
Overweight[4]	130,134	19.4
Cigarette Smoking[5]	156,120	23.2
Acute Drinking[6]	131,803	19.6
Chronic Drinking[7]	61,653	9.2
Drinking & Driving[8]	24,219	3.6

[1] **Seatbelt Nonuse:** Sometimes, seldom or never use seatbelts.

[2] **Hypertension:** Survey respondents were defined as hypertensive if: 1) they were told more than once that their blood pressure is high, 2) they were on medication at the time, or 3) they reported that their blood pressure is still high.

[3] **Sedentary Lifestyle:** No physical activity or physical activity less than three times a week or less than 20 minutes per occasion.

[4] **Obesity:** Twenty percent or more above "ideal weight". Ideal weight is defined as the "mid-value of a medium frame person from the 1959 Metropolitan Life Insurance Height/Weight tables.

[5] **Cigarette Smoking:** Ever smoked 100 cigarettes and smokes regularly now.

[6] **Acute Drinking:** .Five or more drinks on an occasion, one or more times during the past month.

[7] **Chronic Drinking:** An average of two or more drinks per day during the past month.

[8] **Drinking and Driving:** Driving after having had too much to drink, one or more times during the past month.

Table 2

Percent of Adult Hawaii Population at Increased Risk for Morbidity and Mortality from Various Behavioral Risk Factors by Island for 1988

Island	Seatbelt Nonuse	Hypertension	Sedentary Lifestyle	Overweight
State	**6.4**	**15.3**	**54.1**	**19.4**
Neighbor Islands	8.3	18.7	56.4	23.9
Hawaii	5.2	17.6	58.3	23.0
Kauai	5.4	20.9	53.8	21.4
Maui	13.8	17.5	55.4	25.7
Molokai/Lanai	13.1	24.2	56.3	31.6
Oahu	5.8	14.4	53.5	18.0

Island	Smoking	Acute Drinking	Chronic Drinking	Drinking & Driving
State	**23.2**	**19.6**	**9.2**	**3.6**
Neighbor Islands	23.0	23.9	10.6	6.1
Hawaii	21.4	24.4	10.2	7.5
Kauai	21.0	16.2	5.4	3.2
Maui	26.6	28.4	14.3	6.4
Molokai/Lanai	20.8	18.2	8.2	2.1
Oahu	23.3	18.4	8.8	2.9

I. Introduction

A. Data Utilization
B. Interpreting the Tables for Non-Statisticians
C. Requests for Information

I. INTRODUCTION

The Behavioral Risk Factor Surveillance System (BRFSS) was initiated in Hawaii in 1986 by the Health Promotion and Education Office, now the Health Promotion and Education Branch, with the assistance of the Centers for Disease Control (CDC). The BRFSS is designed to collect information on health risk behaviors of adult residents and to monitor the prevalence of these behaviors over time. The risk factors surveyed are major contributors to illness, disability and premature death. They include cigarette smoking, hypertension, obesity, physical inactivity, seatbelt nonuse, and alcohol misuse.

Morbidity and mortality data have traditionally been recorded by health departments. However, there has not been an ongoing attempt to monitor those behaviors that are associated with premature death and disability. In 1981, CDC began assisting states in conducting risk factor surveys. Hawaii participated in 1984 with a point-in-time survey where 1,020 people were interviewed by telephone from May 22 to July 13. Beginning in 1984, CDC expanded the system into an ongoing surveillance system where the telephone interviewing is done on a monthly basis. This method allows for the formulation of annual estimates that are seasonally adjusted.

The Hawaii sample was drawn from all residents over the age of 18, except for institutionalized persons and on-base military personnel. The BRFSS followed a CDC recommended sampling procedure that uses a version of random digit dialing. One thousand eight hundred and sixty-five (1865) interviews were completed over a 12-month period from January through December, 1988.

Today, chronic diseases have become the major cause of mortality (table I.1). Risk factors which contribute to chronic diseases often involve personal health choices and behaviors that are amenable to health education interventions and other

preventive measures. The 1979 Surgeon General's report estimates that as many as one half of all U.S. deaths may be due to unhealthy behaviors or lifestyle (1). The report also states that seven of the ten leading causes of death in the U.S. could be substantially reduced if persons at risk improved just five habits: diet, smoking, exercise, alcohol abuse, and use of antihypertensive medication. Because lifestyle plays such a major role in disease prevention, it is important to identify the extent of these health risk behaviors in the population.

A. Data Utilization

The goal of the BRFSS is to provide data that can be used to plan, implement, and monitor health promotion and disease prevention efforts. Behavioral risk factor data enables public health officials to establish priorities and to develop health promotion and education strategies specific to the needs of their population. In particular, risk factor data can be used to:

a. assess the extent of a health problem

b. identify high risk populations

c. project future morbidity and mortality estimates and trends.

d. monitor trends in the population's health behaviors over time.

e. support legislative initiatives

This report presents the results of the 1988 Hawaii Behavioral Risk Factor Survey.

B. Interpreting the Tables for Non-Statisticians

For all risk factor tables, a statistical significance test (chi square) was performed to determine if an association exists between a demographic variable and a particular risk factor. If a statistical significance was found, then, we can say with 95% confidence that there is an association between the demographic variable and the risk factor tested. This means that the prevalence differences among the demographic variables are not due to chance alone.

Variables that were found to be statistically significant were highlighted in the summary before each table. Those variables

that were not found to be statistically significant are also important, in that we **cannot** say with 95% confidence that there is an association between that demographic variable and the risk factor tested. This means that any prevalence differences observed may be due to chance alone. However, those tables with small sample sizes should be interpreted cautiously. It is possible that with an increase in sample size, those differences may be statistically significant.

When comparing islands, it is important to remember that the distribution of the population by age and race vary from island to island. For example, based on the 1980 Census, Oahu and Maui have higher percentages of those in the two younger age groups (18-24 and 25-34), and Hawaii has a higher percentage of those in the two older age groups (55-64 and 65 and older). By race, Oahu and Maui have a higher percentage of Caucasians; Hawaii has a higher percentage of Japanese; Kauai has a higher percentage of Filipinos; and Molokai/Lanai has a higher percentage of Hawaiians/Part-Hawaiians. Therefore, when looking at the data by island, care must be taken since the data are not age or race adjusted. Fewer people may be at risk on a particular island due to the different age or race distributions and not due to any behavioral factors. The distribution of the population by sex is not significantly different from island to island.

C. Requests for Information

This edition contains basic tabulations for each of the risk factors surveyed. More specialized and detailed tabulations to fit particular program needs may be possible by request to the BRFSS Project Coordinator. We also welcome any comments and suggestions for improving these reports. Contact the BRFSS Project Coordinator through the Health Promotion and Education Branch, Hawaii State Department of Health, P.O. Box 3378, Honolulu, Hawaii, 96801, phone no. (808) 548-5886.

Table I.1

Leading Causes of Resident Death[1] State of Hawaii, 1988

Rank	Cause of Death	Total Number of Deaths[2]	Percent of Total[3]	Rate[4]
1	Diseases of the Heart	1,858	31.1	169.2
2	Malignant Neoplasm	1,516	25.3	138.0
3	Cerebrovascular Disease	426	7.1	38.8
4	All Accidents	281	4.7	25.6
5	Influenza and Pneumonia	198	3.3	18.0
6	Chronic Obstructive Pulmonary Disease	186	3.1	16.9
7	Diabetes Mellitus	145	2.4	13.2
8	Suicide	103	1.7	9.4
9	Other Circulatory Disease	78	1.3	7.1
10	Cirrhosis of the Liver	75	1.2	6.8
11	Septicemia	67	1.1	6.1
	All Other Causes	1,037	17.8	94.4
	Total	**5,970**	**100.0**	**543.6**

[1] Source: Department of Health, State of Hawaii, Statistical Report, 1988.

[2] Resident deaths only(including resident military personnel).

[3] Percents do not equal 100% because of rounding.

[4] Rate of death per 100,000 total resident population.

II. Methodology

A Sampling Design
B. Questionnaire
C. Interview Statistics
D. Data Collection
E. Data Analysis
F. Accuracy of Estimates
G. Demographic Characteristics

II. METHODOLOGY

The following section presents the methodology and data analysis for the 1988 Hawaii Behavioral Risk Factor Surveillance System.

A. Sampling Design

Hawaii's BRFSS follows the CDC's recommended sampling procedure that uses a version of random digit dialing based on clusters of telephone numbers (Waksberg). In addition, to obtain information specific to each island, as well as to the population as a whole, the sampling frame was divided into five geographic areas corresponding to the following islands: Oahu, Hawaii, Maui, and Kauai. Molokai and Lanai were combined. An estimated 96.6% of the households in Hawaii have telephones (Hawaiian Telephone Company Data). Niihau lacks telephone service and, therefore, was not included in the survey.

After contacting a residence, one adult, 18 years of age or older, was randomly selected to be interviewed from among all the adults residing in the household. If the phone number was a business number or a non-working number or if the selected respondent could not be interviewed during the week of the survey, another telephone number was called. Second attempts were made to interview respondents who refused the first time. Ring-no-answers and busy signals were called back on different days and times before being replaced. Three interviews were completed per cluster.

B. Questionnaire

The questionnaire, developed and tested by the Centers for Disease Control, included a number of questions which were selected for comparability with national surveys. The behavioral portion contained questions relating to seatbelt use, hypertension, exercise, overweight, cigarette smoking, smokeless

tobacco, alcohol misuse, cholesterol, routine checkup, and diabetes. Standard demographic questions were included. To reflect the ethnic diversity of Hawaii's population, a question on shoyu intake was added to the diet section, and the list of ethnic categories were expanded. For a copy of the 1988 survey questionnaire, see appendix C. Similar questionnaires and methods used each year by participating states also allow for comparisons of risk factor prevalence among states and over time. The questionnaire took approximately 11 minutes to complete. Thirty-six states and Washington D.C. participated in the 1988 Behavioral Risk Factor Survey.

C. Interview Statistics

The distribution of telephone calls by outcome is shown in table II.1. There were 1871 completed interviews with an additional 353 persons refusing to participate and 22 terminating during the interview for a 17% refusal rate. Six of the completed interviews were not included in the analysis because they couldn't be weighted; age and/or race questions were either "refused" or had a "don't know" response.

D. Data Collection

The telephone interviews were conducted by professional interviewers provided through a competitive bid contract with East West Research, a survey and research firm located in Honolulu. The survey was supervised by the project coordinator. Training and technical assistance were provided to interviewers and staff by the CDC. The survey was conducted one week each month at the State Department of Health during evenings and weekends, with some weekday interviewing included.

E. Data Analysis

The University of Hawaii School of Public Health processed and analyzed the data under a contract from the State Health Department. Dr. Chin Sik Chung, Professor at the University of Hawaii, School of Public Health, Department of Public Health Sciences, provided these services with the assistance of his staff, Ms Ruth E. Lew, Crissie Yasunobu and Sara Wei.

The data from the interviews were entered into the

computer and validity checks and sight verification were performed. Statistical software packages (SPSS[x] and SAS) were used to generate frequency distributions and cross tabulations.

Percentages were weighted to account for the probability of selection (based on the number of adults and number of different telephone numbers in the household), cluster size, stratum size, and age-race-sex distribution of the general population based on the 1980 Census.

F. Accuracy of Estimates

The sample size of 1872 (156 per month over a 12-month period) was selected to achieve a 95% confidence level and 3% precision for risk factor prevalence estimates for the total adult population. Prevalence estimates by age, ethnicity, gender, education, employment status, income, island and marital status do not reflect this level of accuracy. A cluster size of three was chosen by CDC for maximum efficiency and minimum loss of precision.

Table II.1

Distribution of Telephone Calls by Final Outcome State of Hawaii, 1988

Final Outcome	Number	Percent of Total
Completed Interviews	1,871	40.5
Refused Interviews	353	7.6
Non-working Number	1,013	21.9
No Answer	507	11.0
Business Telephone	317	6.9
No One Eligible	71	1.5
Selected Respondent Unavailable	248	5.4
Language Barrier	154	3.3
Terminated During Interview	22	0.5
Line Busy	7	0.2
Respondent Unable to Respond -Physical/Mental Impairment	61	1.3
Total	**4,624**	**100.0**

G. Demographic Characteristics

The demographic variables collected for the Hawaii population included the following: island, sex, age, race, education, employment status, marital status, and household income. Table II.2 summarizes the Hawaii population and gives the unweighted and weighted number and percents by demographic characteristics.

The distributions of the Hawaii population for each island by age, sex, and race is shown in table II.3. The distribution of the population by sex is not significantly different from island to island.

There is, however, a significantly different distribution of the population by age and a significantly different distribution of the population by race as one moves from island to island. For example, Oahu and Maui have higher percentages of those in the two younger age groups (18-24 and 25-34 year olds), and Hawaii has a higher percentage of those in the two older age groups (55-64 and 65 and older). By race, Oahu and Maui have a higher percentage of Caucasians, Hawaii has a higher percentage of Japanese, Kauai has a higher percentage of Filipinos, and Molokai/Lanai has a higher percentage of Hawaiians/Part-Hawaiians. Therefore, when looking at the data by island, care must be taken since they are not age or race adjusted. Fewer people may be at risk on a particular island due to the different age or race distributions and not due to any behavioral factor.

Table II.2

Behavioral Risk Factor Survey Sample Population Unweighted and Weighted* Number and Percent of Adult Population by Demographic Characteristics, State of Hawaii, 1988

Demographic Characteristic	Unweighted Number & (Percent)		Weighted Number & (Percent)	
All Respondents	**1,865**	**(100.0)**	**671,947**	**(100.0)**
Island				
Hawaii	215	(11.5)	67,010	(10.0)
Kauai	215	(11.5)	29,251	(4.4)
Maui	216	(11.6)	49,402	(7.4)
Molokai /Lanai	216	(11.6)	5,785	(0.9)
Oahu	1,003	(53.8)	520,500	(77.5)
Sex				
Female	1,026	(55.0)	339,096	(50.5)
Male	839	(45.0)	332,851	(49.5)
Age				
18-24	204	(10.9)	119,589	(17.8)
25-34	468	(25.1)	179,922	(26.8)
35-44	455	(24.4)	112,759	(16.8)
45-54	233	(12.5)	95,737	(14.2)
55-64	226	(12.1)	86,443	(12.9)
65+	279	(15.0)	77,497	(11.5)
Race				
Caucasian	667	(35.8)	194,689	(29.0)
Filipino	217	(11.6)	107,311	(16.0)
Hawaiian/Part-Hawaiian	338	(18.1)	99,082	(14.7)
Japanese	462	(24.8)	177,479	(26.4)
Others	181	(9.7)	93,387	(13.9)
Education				
Eighth Grade or Less	136	(7.3)	37,476	(5.6)
Some High School	170	(9.1)	54,850	(8.2)
High Sch Graduate/GED Certif.	610	(32.7)	230,380	(34.3)
Some Tech Sch/Tech Sch Grad	52	(2.8)	20,464	(3.0)
Some College	437	(23.4)	170,592	(25.4)
College Graduate	319	(17.1)	116,033	(17.3)
Post Graduate or Prof. Degree	137	(7.3)	41,170	(6.1)
Refused	4	(0.2)	983	(0.2)

Table II.2 continues on next page

Table II.2 — Part 2.

Behavioral Risk Factor Survey Sample Population Unweighted and Weighted* Number and Percent of Adult Population by Demographic Characteristics, State of Hawaii, 1988

Demographic Characteristic	Unweighted Number & (Percent)		Weighted Number & (Percent)	
Employment Status				
Employed for Wages	1,085	(58.2)	415,379	(61.8)
Self Employed	176	(9.4)	51,061	(7.6)
Unemployed	82	(4.4)	26,239	(3.9)
Homemaker	141	(7.6)	46,942	(7.0)
Student	62	(3.3)	38,458	(5.7)
Retired	316	(16.9)	92,720	(13.8)
Refused	3	(0.2)	1,149	(0.2)
Marital Status				
Married	1,128	(60.5)	428,746	(63.8)
Divorced	163	(8.7)	37,746	(5.6)
Widowed	125	(6.7)	27,662	(4.1)
Separated	45	(2.4)	13,215	(2.0)
Never Married	369	(19.8)	152,9621	(22.8)
Member of an Unmarried Couple	29	(1.6)	10,350	(1.5)
Refused	6	(0.3)	1,266	(0.2)
Household Income				
Below $10,000	251	(13.5)	62,042	(9.2)
$10,000 < $14,999	242	(13.0)	83,417	(12.4)
$15,000 < $19,999	220	(11.8)	78,523	(11.7)
$20,000 < $24,999	206	(11.0)	79,326	(11.8)
$25,000 < $34,999	256	(13.7)	90,629	(13.5)
$35,000 < $49,999	249	(13.4)	97,469	(14.5)
Over $50,000	24(	(13.6)	104,680	(15.6)
Don't know/Not sure	109	(5.8)	47,722	(7.1)
Refused	76	(4.1)	25,249	(3.8)

*Weighted to be representative of the age, sex, and race distribution of Hawaii based on the 1980 Census.

Table II.3

Sex, Age, and Race Distribution of the Adult Population* by Island State of Hawaii, 1988

	Island				
	Hawaii	**Kauai**	**Maui**	**Molokai & Lanai**	**Oahu**
Sex					
Female	31,241	17,581	21,237	2,900	266,137
Male	35,769	11,670	28,165	2,885	254,363
Age					
18-24	8,253	3,391	8,880	927	98,137
25-34	16,976	6,536	16,090	981	139,339
35-44	10,713	4,597	7,401	1,037	89,012
45-54	7,797	7,831	4,856	1,005	74,247
55-64	13,015	3,490	7,213	822	61,904
65+	10,256	3,406	4,962	1,012	57,861
Race					
Caucasian	17,175	6,399	16,753	872	153,490
Filipino	9,599	8,261	7,170	1,271	81,010
Hawaiian/Part-Hawaiian	14,671	5,244	9,467	2,852	66,849
Japanese	20,764	7,756	11,044	608	137,307
Others	4,801	1,592	4,969	181	81,844
Total	**67,010**	**29,251**	**49,402**	**5,785**	**520,500**

* Weighted to be representative of the age, sex, and race distribution of Hawaii based on the 1980 Census

III. Survey Results

A. Seatbelt Use
B. Hypertension
C. Exercise
D. Weight and Diet
E. Tobacco Use
F. Alcohol Use
G. Preventive Health Practices
    1. Routine Check-ups
    2. Cholesterol
    3. Diabetes

Survey Results
A. SEATBELT USE

Injury has been called the principal public health problem in the United States today; it is the leading cause of death for persons under 44 years of age, and the fourth leading cause of death for persons of all ages (2, 3). In Hawaii, injury was the fourth leading cause of death in 1988 and the leading cause of death for persons from the age of one through 34. Of the 281 Hawaii deaths due to injury, 142 resulted from motor vehicle crashes, including deaths involving pedestrians (4).

Most injuries are not accidental. Contrary to popular belief, "they are predictable, preventable, and modifiable" (2). According to the Surgeon General's report, the simple use of combined lap and shoulder belts can cut the risk of death or serious injury from motor vehicle crashes by almost half (1). Despite this fact, of the 98 motor vehicle occupants who were killed in 1988, 63.3% were not wearing seatbelts (5).

In a study commissioned by the Hawaii Coalition for Safety Belt Use, Oahu drivers involved in accidents who were not wearing seatbelts were found to be 3.5 times more likely to be injured than those wearing seatbelts.

The Centers for Disease Control defines seatbelt nonuse as "sometimes, seldom, or never using seatbelts when driving or riding in a car". Seatbelt data are presented as the prevalence of "nonuse" to portray risk.

The passage of Hawaii's mandatory seatbelt law in 1985 had a considerable impact on seatbelt use. Seatbelt nonuse decreased dramatically from 63.9% in 1984, 9.2% in 1986, 7.3% in 1987, and 6.4% in 1988. These figures indicate that Hawaii's seatbelt law enjoys a high compliance rate.

Of the 37 states participating in the Behavioral Risk Factor Surveillance System, Hawaii had the lowest prevalence of seatbelt nonuse (for the participating states: range, 6.4%-67.4%; median, 30.1%; mean 33.2%).

Table A.1 presents the prevalence of seatbelt nonuse by demographic characteristics. Statistically significant differences in seatbelt nonuse were found in the following demographic variables:

(1) **Island:** Molokai/Lanai (13.1%) and Maui (13.8%) had the highest percentages of adults at risk from seatbelt nonuse. Both had prevalence rates about twice that of all the respondents combined (6.4%).

(2) **Sex:** The percentage of seatbelt nonuse for men (9.0%) was over two times greater than that for women (3.7%).

(3) **Race:** Japanese (7.8%), Caucasians (6.9%), and Filipinos (6.7%) had the highest proportion of individuals not using seatbelts.

(4) **Marital Status:** Those who were a member of an unmarried couple (15.6%), never married (11.4%) or divorced (7.7%) had the highest percentages of seatbelt nonuse.

Differences in seatbelt nonuse by age, education, employment status and household income were not statistically significant.

Table A.1

Prevalence of Seatbelt Nonuse[1] by Demographic Characteristics, State of Hawaii, 1988

Demographic Characteristic	N[2]	Percent[3]
All respondents	1865	6.4
Island		
Hawaii	215	5.2
Kauai	215	5.4
Maui	216	13.8
Molokai/Lanai	216	13.1
Oahu	1,0030	5.8
Sex		
Male	839	9.0
Female	1,026	3.7
Age		
18-24	201	11.2
25-34	468	6.3
35-44	455	5.9
45-54	233	3.0
55-64	226	5.8
65+	279	4.5
Race		
Caucasian	667	6.9
Filipino	217	6.7
Hawaiian/Part-Hawaiian	338	5.3
Japanese	462	7.8
Others	181	3.3
Education		
Eighth Grade or less	136	7.0
High School	170	7.5
High Sch Grad/GED Certif	610	7.0
Some Tech Sch/Tech Sch Grad	52	0.8
Some College	437	6.2
College Grad	319	6.6
Post Grad/Prof Degree	137	2.7
Employment Status		
Employed for Wages	1085	6.1
Self Employed	176	4.3
Unemployed	82	10.9
Homemaker	141	5.3
Student	62	10.2
Retired	316	6.5
Married Status		
Married	1128	4.3
Divorced	163	7.7
Widowed	125	4.5
Separated	45	6.2
Never Married	369	11.4
Unmarried Couple	29	15.4
Household Income		
Less than $10,000	251	5.7
$10,000 < $14,999	242	9.4
$15,000 < $19,999	220	4.7
$20,000 < $24,999	206	7.4
$25,000 < $34,999	256	6.0
$35,000 < $49,999	249	4.0
Over $50,000	246	7.7

[1] Seatbelt nonuse is defined as sometimes, seldom or never using seatbelts.

[2] Unweighted sample size used as the denominator for each estimate. The total for each group may not equal 1865 because of a response of "refused" or "unknown" for that demographic variable.

[3] All percents weighted to be representative of the age, sex, and race distribution of Hawaii.

In an attempt to examine which risk factors are associated with seatbelt nonuse, a pairwise comparison for each risk factor was performed. Table A.2 shows the percentage of other risk factors present among those who use seatbelts in comparison to those who don't use seatbelts. Statistically significant associations were found between seatbelt nonuse and all three drinking behaviors (acute drinking, chronic drinking, and drinking and driving) and cigarette smoking. That is, among those people who do not use seatbelts, a greater percentage reported acute drinking, chronic drinking, and drinking and driving and cigarette smoking compared to those people who use seatbelts.

Table A.2

Percentage of Respondents With Other Risk Factors by Seatbelt Use State of Hawaii, 1988

Seatbelt Status	Other Risk Factors						
	Hyper-tension (%)	Over-weight (%)	Smoking (%)	Seden-tary (%)	Acute Drinking (%)	Chronic Drinking (%)	Drinking & Driving (%)
Does Not Use Seatbelts	13.6	23.0	38.6	60.7	50.2	35.4	15.9
Uses Seatbelts	15.4	19.2	22.3	53.9	17.5	7.5	2.8

Survey Results
B. HYPERTENSION

One fourth of the population, or an estimated 58 million Americans, have high blood pressure (hypertension). It is the most prevalent of all the cardiovascular diseases in the U.S., the number one risk factor for stroke, and a major risk factor for coronary heart disease, contributing to an estimated 250,000 deaths each year (6,7,1).

High blood pressure has been referred to as a "silent killer" because no clear symptoms are present. As a result, it often goes undetected, making it essential that blood pressure be measured regularly. While there is no cure, treatment of high blood pressure can prolong life and prevent many of its related health problems. Although high blood pressure may affect individuals at any time, the prevalence of the disease increases with age (7). Once a person has been diagnosed with hypertension, a treatment plan which may include lifestyle modifications as well as medication can be prescribed. Controlling high blood pressure is one of the most effective means of reducing mortality in the adult population (8).

For the purposes of this report, respondents were identified as being hypertensive if they: a) were told on more than one occasion that their blood pressure was high, or b) reported that they were taking medication to control their blood pressure, or c) reported that their blood pressure was still high. This definition seeks to include all known diagnosed hypertensives in the population and is the National Heart, Lung, Blood Institute's definition.

In 1988, the prevalence of hypertension in Hawaii was 15.3%, one of the lowest of the 37 states participating in the Behavioral Risk Factor Surveillance System (for the participating states: range, 11.94% - 22.19%; median, 17.29%; mean, 17.35%) . Table B.1 shows the prevalence of

hypertension by demographic characteristics. Statistically significant differences in hypertension were found in the following demographic variables:

(1) **Island:** Molokai/Lanai (24.2%) and Kauai (20.9%) had the highest rates of hypertension.

(2) **Age:** Hypertension increased with age, from 1.1% for those 18-24 years of age to 34.8% for those 65 years of age and older.

(3) **Race:** Hawaiians and Part-Hawaiians (19.5%) and Japanese (18.5%) had higher proportions of adults with hypertension.

(4) **Education:** Although no trend was found between hypertension and education, hypertension was more prevalent among those less educated. Those with eighth grade or less (26.2%), some high school (25.4%) or a high school graduate or GED certificate holder (17.5%) had the highest percentages.

(5) **Employment Status:** Retired persons (37.2%) had the highest percentage of hypertensives (a factor probably confounded with age). Homemakers (18.4%) also had a high percentage of hypertensives among them (a factor probably confounded with sex).

(6) **Marital Status:** Those who were widowed (28.5%) had the highest percentage, over one and a half times more than the state prevalence (15.3%). The percentage of hypertensives were also high for separated (18.6%) and married (18.2%) persons.

(7) **Household Income:** No trend was found, but those with incomes less than $10,000 (22.9%) and those with incomes of over $50,000 (17.8%) had the highest proportion of persons with hypertension.

Differences in hypertension by sex were not statistically significant.

Table B.1

Prevalence of Hypertension[1] by Demographic Characteristics, State of Hawaii, 1988

Demographic Characteristic	N[2]	Percent[3]
All Respondents	**1865**	**15.3**
Island		
Hawaii	215	17.6
Kauai	215	20.9
Maui	216	17.5
Molokai/Lanai	216	24.2
Oahu	1003	14.4
Sex		
Female	1026	14.8
Male	839	15.8
Age		
18-24	204	1.1
25-34	468	4.2
35-44	455	11.9
45-54	233	26.0
55-64	226	32.9
65+	279	34.8
Race		
Caucasian	667	12.0
Filipino	217	13.2
Hawaiian/Part-Hawaiian	338	19.5
Japanese	462	18.5
Others	181	13.7
Education		
Eighth Grade or Less	136	26.2
Some High School	170	25.4
High Sch Grad/GED Certif	610	17.5
Some Tech Sch/Tech Sch Grad	52	9.6
Some College	437	12.8
College Grad	319	7.4
Post Grad/Prof Degree	137	14.9

Demographics Characteristic	N[2]	Percent[3]
Employment Status		
Employed for Wages	1085	11.8
Self Employed	176	14.7
Unemployed	82	9.3
Homemaker	141	18.4
Student	62	1.7
Retired	316	37.2
Marital Status		
Married	1128	18.2
Divorced	163	16.4
Widowed	125	28.5
Separated	45	18.6
Never Married	369	4.9
Unmarried Couple	29	1.8
Household Income		
Less than $10,000	251	22.9
$10,000 < $14,999	242	15.3
$15,000 < $19,999	220	13.0
$20,000 < $24,999	206	13.7
$25,000 < $34,999	256	15.4
$35,000 < $49,999	249	11.7
Over $50,000	246	17.8

[1] Survey respondents were defined as hypertensive if a) they were told more than once that their blood pressure is high, b) they were on medication at the time, or c) they reported that their blood pressure was still high.

[2] Unweighted sample size used as the denominator for each estimate. The total for each group may not equal 1865 because of a response of "refused" or "unknown" for that demographic variable.

[3] All percents weighted to be representative of the age, sex, and race distribution of Hawaii.

Table B.2 shows the percentage of hypertensives who reported that "medication was currently prescribed" for their high blood pressure. Overall, 76.3% of all hypertensives in Hawaii were currently prescribed medication. Differences by age were statistically significant.

Age: With the exception of the 25-34 year old group, as age increased, the percentage of hypertensives who were prescribed medication increased, from 66.7% to 88.3%.

Differences by sex and race in medication prescribed were not statistically significant.

Table B.2

Percentage of Hypertensives Prescribed Medication by Demographic Characteristics State of Hawaii, 1988

Demographic Characteristic	N[1]	Percent[2]
All Hypertensives	**321**	**76.3**
Sex		
Female	177	67.7
Male	144	84.5
Age		
18-34	2	66.7
25-34	23	20.5
35-44	50	75.4
45-54	55	74.7
55-64	82	82.1
65+	109	88.3
Race		
Caucasian	93	75.6
Filipino	32	89.0
Hawaiian/Part-Hawaiian	67	65.6
Japanese	101	76.5
Other	28	79.0

[1] Unweighted sample size used as the denominator for each estimate.

[2] Percents weighted to be representative of the age, sex and race distribution of Hawaii.

Table B.3 shows a comparison of using and not using medication by current hypertensives to control their high blood pressure. Over ninety percent of the respondents taking medication reported that their blood pressure was under control. This was not significantly different from those respondents whose blood pressure was under control, but were not taking medication (79.1%). However, while it may appear that not taking medication is as effective as taking medication in reducing high blood pressure, caution should be used in interpreting these results. Persons who were told that they have high blood pressure but not under treatment may have less severe HBP, and persons with blood pressures that are labile (fluctuates up and down) may be more likely to have normal BP when rechecked.

In addition, a recent study found that percentage of hypertensives who reported that their blood pressure was under control, through telephone surveys, was significantly higher than the percentage actually under control, based on measured blood pressures (6). In other words, self-reported surveys, as opposed to actual measurements, tend to overestimate the percentage of hypertensives with controlled blood pressure. Ironically, these results point to a larger problem with more serious consequences. If hypertensives incorrectly believe that their blood pressure is under control, they may be less motivated to continue their medication, or beneficial health practices, such as restricting sodium intake, or controlling weight. As a result, their blood pressure may remain uncontrolled.

Table B.3

Comparison of Hypertensives Use and Nonuse of Medication to Control Their High Blood Pressure State of Hawaii, 1988

No Treatment (27.8%)[1]			UnderTreatment (72.2%)[4]		
Under Control[2] (%)	Not Under Control[3] (%)	Don't Know (%)	Under Control (%)	Not Under Control (%)	Don't Know (%)
79.1	10.6	10.3	93.2	5.0	1.9

[1] Those respondents not currently taking medication to reduce their blood pressure.

[2] Respondents who reported, as far as they know, that their blood pressure was presently normal or under control.

[3] Respondents who reported, as far as they know, that their blood pressure was still high.

[4] Respondents who reported that they were currently taking medication.

In an attempt to examine which risk factors are associated with hypertension, a pairwise comparison for each risk factor was performed. Table B.4 shows the percentage of other risk factors present among those who have hypertension in comparison to those who don't have hypertension. Hypertension was found to be significantly associated with being overweight. That is, the percentage of hypertensives (32.3%) who were overweight was more than one and a half times the percentage of non-hypertensives who were overweight (17.1%).
In addition, a significant inverse relationship was found between hypertension and acute drinking. For example, hypertensive adults (15.6%) were less likely to binge drink than those who were not hypertensive (20.3%).

Table B.4

Percentage of Respondents With Other Risk Factors by Hypertension Status State of Hawaii, 1988

Hypertension Status	Other Risk Factors						
	Seatbelt Nonuse (%)	Over-weight (%)	Smoking (%)	Seden-tary (%)	Acute Drinking (%)	Chronic Drinking (%)	Drinking & Driving (%)
Hypertensive	5.6	32.3	23.4	52.7	15.6	10.8	4.0
Not Hypertensive	6.5	17.1	23.1	54.4	20.3	8.8	3.5

Survey Results
C. EXERCISE

Regular exercise plays a notably beneficial role in the overall health of an individual. Those who exercise regularly report that they feel better, have more energy, often lose weight and improve their muscular strength and flexibility (1). Studies have also shown that vigorous physical activity on a regular basis reduces the risk of coronary heart disease and ameliorates the symptoms of anxiety and depression. Estimates show that about 30% of coronary heart disease is attributable to lack of physical activity (9). Evidence also suggests that physical activity may have important beneficial effects on hypertension, non-insulin dependent diabetes, and osteoporosis (10).

The Centers for Disease Control defines sedentary lifestyle as no physical activity or physical activity less than three times per week or less than 20 minutes per occasion. In the survey, respondents were asked to provide details of two physical activities performed during the past month.

The Hawaii goal for the 1990 Health Objectives seeks to increase to at least 60% the proportion of adults 18 years of age and over who participate regularly in appropriate aerobic exercise. The term "appropriate" is defined as exercises which involve large muscle groups in dynamic movement for periods of 20 minutes or longer, three or more days per week and performed at an intensity requiring 60% or greater of an individual's cardiorespiratory capacity (11). In 1988, only 9.6% of Hawaii's adults met this objective.

Hawaii's survey results showed 54.1% of adults engaged in a sedentary lifestyle, one of the lowest percentages of the 37 states participating in the Behavioral Risk Factor Surveillance System. (for the participating states: range 45.2% - 73.6%; median, 58.0%; mean 58.2%).

Table C.1 shows the prevalence of sedentary lifestyle and also those meeting the exercise level for the National 1990 Health Objective. Statistically significant differences in sedentary lifestyle were found in the following demographic variables:

(1) **Sex:** Females (59.1%) had a higher percentage of sedentary lifestyle than males (49.0%).

(2) **Race:** Filipinos (70.9%), Hawaiians/Part-Hawaiians (59.9%), and Japanese (58.7%) had the highest percentages of individuals with a sedentary lifestyle.

(3) **Education:** The lower education levels seemed to have the highest prevalence of sedentary lifestyle. Those with some high school (72.9%), some technical school/technical school graduate (71.2%), eighth grade education or less (60.1%), or a high school graduate (57.2%) had the higher percentages.

(4) **Marital Status:** Members of an unmarried couple (67.4%) and widowed persons (67.3%) had the highest percentages of adults with a sedentary lifestyle.

Differences in sedentary lifestyle by island, age, employment status or household income were not statistically significant.

Table C.1

Prevalence of Sedentary Lifestyle by Demographic Characteristics, State of Hawaii, 1988

Demographic Characteristics	N[1]	Sedentary[2] (%)	Meets 1990 Objectives[3] (%)
All Respondents	**1865**	**54.1**	**9.6**
Island			
Hawaii	215	58.3	7.7
Kauai	215	53.8	10.1
Maui	216	55.4	10.4
Molokai/Lanai	216	56.3	7.3
Oahu	1003	53.5	9.7
Sex			
Female	1026	59.1	6.2
Male	839	49.0	13.0
Age			
18-24	204	46.1	6.1
25-34	468	52.7	10.2
35-44	455	57.2	8.3
45-54	233	58.6	11.3
55-64	226	60.8	10.4
65+	279	52.5	12.4
Race			
Caucasian	667	39.9	17.5
Filipino	217	70.9	7.0
Hawaiian/Part-Hawaiian	338	59.9	8.4
Japanese	462	58.7	3.1
Others	181	49.7	6.9
Education			
Eighth Grade or Less	136	60.1	8.2
Some High School	170	72.9	2.5
Some High School Grad/GED Certif	610	57.2	7.5
Some Tech Sch/Tech Sch Grad	52	71.2	9.8
Some College	437	48.8	9.7
College Graduate	319	47.9	14.3
Post Grad/Prof Degree	137	37.6	18.4

Table C.1 continues on next page.

Table C.1—Part 2

Prevalence of Sedentary Lifestyle by Demographic Characteristics, State of Hawaii, 1988

Demographic Characteristics	N[1]	Sedentary[2] (%)	Meets 1990 Objectives[3] (%)
Employment Status			
Employed for Wages	1085	54.6	8.9
Self Employed	176	49.2	13.3
Unemployed	82	55.4	11.9
Homemaker	141	56.4	5.0
Student	62	54.3	4.3
Retired	316	52.5	14.8
Married Status			
Married	1128	54.9	10.4
Divorced	163	56.5	9.2
Widowed	125	67.3	7.5
Separated	45	43.7	9.4
Never Married	369	49.1	7.9
Unmarried Couple	29	67.4	4.0
Household Income			
Less than $10,000	251	65.3	4.3
$10,000 < $14,999	242	56.2	10.1
$15,000 < $19,999	220	55.2	5.9
$20,000 < $24,999	206	49.8	11.0
$25,000 < $34,999	256	43.2	15.4
$35,000 < $49,999	249	53.9	12.2
Over $50,000	119	53.4	10.2

[1] Unweighted sample size used as the denominator for each estimate. The total for each group may not equal 1865 because of "refused" or "unknown" for that demographic varible.

[2] Sedentary lifestyle: No physical activity or physical activity less than three times per week or less than 20 minutes per occasion. All percents weighted to be representative of the age, sex, and race distribution of Hawaii.

[3] Meets 1990 Objectives: Any physical activity or pair of activities that require the use of large muscle groups at 60 to 75 percent of functional capacity, for 20 or more minutes, three or more times per week.

The top ten activities in 1988 for those who exercised were: walking (28.5%), jogging/running (10.2%), gardening (9.4%), swimming (7.4%), aerobics (6.0%), golf (4.9%), weight lifting (4.8%), calisthenics (4.3%), bicycling (3.8%), and tennis (2.7%). There were significant differences by sex in the type of activities for those who exercise (see Table C.2).

Table C.2

Top Ten Activities for Men and Women Who Exercise State of Hawaii, 1988

MEN			WOMEN		
Rank	**Activity**	**Percent***	**Rank**	**Activity**	**Percent***
1	Walking	18.5	1	Walking	38.2
2	Jogging/Running	14.7	2	Gardening	10.6
3	Gardening	8.1	3	Aerobics	10.4
4	Swimming Laps	7.8	4	Swimming Laps	7.0
5	Golf	7.2	5	Jogging/Running	5.9
6	Weight Lifting	6.8	6	Calesthenics	3.9
7	Calisthenics	4.7	7	Bicycling	3.5
8	Bicycling	4.1	8	Weight Lifting	2.8
9	Basketball	3.8	9	Golf	2.6
10	Surfing	3.2	10	Tennis	2.5
11	Other	21.1	11	Other	12.6
	Total	100%		Total	100%

* Percentage of those who exercise.

In an attempt to examine which risk factors are associated with sedentary lifestyle, a pairwise comparison for each risk factor was performed. Table C.3 shows the percentage of other risk factors present among those who are sedentary in comparison to those who are not sedentary. Statistically significant associations were found between having a sedentary lifestyle and being overweight. For example, a greater percentage of sedentary people were overweight (22.6%) than non sedentary people (15.5%).

Table C.3

Percentage of Respondents With Other Risk Factors by Sedentary Lifestyle State of Hawaii, 1988

Sedentary Lifestyle	Other Risk Factors						
	Seatbelt Nonuse	Hyper-tension	Over-weight	Smoking	Acute Drinking	Chronic Drinking	Drinking & Driving
Sedentary	7.1	14.9	22.6	25.4	19.3	9.0	2.9
Not Sedentary	5.4	15.7	15.5	20.7	20.0	9.4	4.5

Survey Results
D. WEIGHT AND DIET

Obesity is a major risk factor for cardiovascular disease (12). It also increases the risk for adult-onset diabetes, gall bladder and degenerative joint diseases (5). The rate of diabetes is nearly three times higher for overweight people than for other people (14). In addition, risk factors for coronary heart disease such as high blood pressure and elevated serum cholesterol are significantly higher among overweight persons (14). Obesity may also be an emotional and social problem for people growing up in a society which prizes being slim (1).

For the purposes of this report, overweight was defined as 20% or more above "ideal weight". Ideal weight is defined as the mid-value of a medium frame person from the 1959 Metropolitan Life Insurance Company height/weight tables.

Hawaii's goal for the 1990 Objectives is to reduce the prevalence of significant overweight among the Hawaii adult population to 15% of men and 12% of women. In 1988, the prevalence of overweight men was 20.8%, overweight women was 18.0%, and the overall adult percentage was 19.4%.

Of the 37 states participating in the Behavioral Risk Factor Surveillance System, Hawaii's population ranked third lowest in the prevalence of overweight adults (for the participating states: range, 17.3% - 34.3%; median, 25.1%; mean, 24.3%).

Table D.1 shows the prevalence of overweight adults by demographic characteristics. Statistically significant differences in overweight were found in the following demographic variables:

(1) **Island:** Molokai/Lanai (31.6%), Maui (25.7%), and Hawaii (23.0%) had higher percentages of those overweight.

(2) **Sex:** A slightly greater percentage of men (20.8%) were overweight than women (18.0%).

(3) **Age:** The percentage of overweight adults increased to age 35-44, then decreased.

(4) **Race:** Slightly less than half (42.7%) of all Hawaiians/Part-Hawaiians were overweight, more than twice the state prevalence.

(5) **Education:** While no trend was found, those who were a high school graduate or GED certificate holder (24.4%) or those with some high school (21.4%) had the highest percentages.

(6) **Household Income:** Although no trend was found, those who make $15,000 to $20,000(24.1%), $20,000 to $24,000 (23.8%), less than $10,000 (23.4%) and $25,000 to $35,000 (21.4%) had the highest percentages.

Differences in overweight by employment status and marital status were not statistically significant.

Table D.1

Prevalence of Overweight[1] by Demographic Characteristics State of Hawaii, 1988

Demographic Characteristics	N[2]	Percent[3]
All Respondents	**1865**	**19.4**
Island		
Hawaii	215	23.0
Kauai	215	21.4
Maui	216	25.7
Molokai/Lanai	216	31.6
Oahu	1003	18.0
Sex		
Female	1026	18.0
Male	839	20.8
Age		
18-24	204	14.2
25-34	468	21.2
35-44	455	24.6
45-54	233	20.6
55-64	226	20.5
65+	279	12.6
Race		
Caucasian	667	17.4
Filipino	217	16.3
Hawaiian/Part-Hawaiian	338	42.7
Japanese	462	13.6
Others	181	13.2
Education		
Eighth Grade or Less	136	19.1
Some High School	170	21.4
High Sch Grad/GED Certif	610	24.4
Some Tech Sch/Tech Sch Grad	52	10.5
Some College	437	16.0
College Graduate	319	15.0
Post Grad/Prof Degree	137	19.2
Employment Status		
Employed for Wages	1085	21.2
Self Employed	176	13.3
Unemployed	82	16.3
Homemaker	141	23.9
Student	62	8.6
Retired	316	17.6
Marital Status		
Married	1128	19.6
Divorced	163	16.3
Widowed	125	25.5
Separated	45	23.3
Never Married	369	17.8
Unmarried Couple	29	20.3
Household Income		
Less than $10,000	251	23.4
$10,000 < $14,999	242	18.1
$15,000 < $19,999	220	24.1
$20,000 < $24,999	206	23.8
$25,000 < $34,999	256	21.4
$35,000 < $49,999	249	17.9
Over $50,000	246	13.7

[1] Overweight is defined as 20% or more above "ideal weight". Ideal weight defined as the mid-value of a medium frame person from the 1959 Metropolitan Height-Weight tables.

[2] Unweighted Sample Size used as the denominator for each estimate. The total for each group may not equal 1865 because of a response of "refused" or "unknown" for that demographic variable.

[3] All percents weighted to be representative of the age, sex, and race distribution of Hawaii.

Slightly more than three-fourths of all overweight adults in Hawaii reported that they were trying to lose weight. Table D.2 shows the percentage of overweight adults trying to lose weight by demographic characteristics. Significant differences were found by age.

> **Age:** Although no trend was found, the highest percentages of overweight people were in the 55-64 year age group (89.7%) and 18-24 year age group (81.6%).

No significant differences by sex and race were found in the percentage of adults trying to lose weight.

Table D.2 also shows the percentage of weight loss regimens among the overweight. To reduce the prevalence of overweight in the U.S., the 1990 National Health Objectives proposed that by 1990, 50% of the overweight population should have adopted weight loss regimens combining appropriate balance of diet and physical activity. In Hawaii, 25.8% of overweight adults adopted weight loss regimens combining both approaches.

In the questionnaire, survey respondents were asked if they were trying to lose weight. Those who answered "yes" were then asked if they were eating fewer calories and also if they were increasing their physical activity to lose weight. Based on their answers, respondents were classified according to one of the following methods of weight loss: eating fewer calories, increasing physical activity, both methods, neither method (these respondents reported that they were now trying to lose weight, but said no to eating fewer calories and increased physical activity). Differences in methods of losing weight by sex, and race were not statistically significant.

Table D.2

Percentage of Overweight Adults[1] Trying to Lose Weight According to Method of Losing Weight by Demographic Characteristics State of Hawaii, 1988

Demographic Characteristic	N[2]	Now Trying to Lose Weight (%)[3]	Method of Losing Weight: Eating Fewer Cal. (%)	Inc. Physical Activity (%)	Both Methods (%)	Neither Method[4] (%)
All Overweight Respondents	**393**	**76.3**	**26.6**	**9.4**	**25.8**	**14.5**
Sex						
Female	193	81.1	29.7	5.5	28.7	17.3
Male	200	72.3	24.0	12.6	23.5	12.2
Age						
18-34	30	81.6	21.9	18.4	27.7	13.7
25-34	103	73.0	21.6	13.5	28.5	9.4
35-54	103	73.6	22.7	10.4	33.3	7.2
45-54	54	74.5	28.3	6.1	23.8	16.3
55-64	58	89.7	47.7	0.1	17.1	24.7
65+	45	66.0	20.9	0.0	12.7	32.5
Race						
Caucasian	119	78.4	26.5	6.5	31.8	13.6
Filipino	40	81.9	28.0	14.7	26.5	12.7
Hawaiian/ Part-Hawaiian	139	72.3	24.1	7.6	26.6	14.1
Japanese	65	79.1	33.5	10.5	13.3	21.7
Others	30	70.2	18.7	14.5	31.2	5.8

[1] Pregnant women, 18 through 45 years of age, were excluded from the analysis. Overweight defined as 20% or more above ideal weight.

[2] Unweighted sample size used as the denominator for each estimate.

[3] All percents weighted to be representative of the age, sex, and race distribution of Hawaii.

[4] Respondents who reported that they were now trying to lose weight, but said no to eating fewer calories and no to increased physical activity.

In an attempt to examine which risk factors were associated with overweight, a pairwise comparison for each risk factor was performed. Table D.3 shows the percentage of other risk factors present among the overweight in comparison to those adults who were not overweight. Statistically significant associations were found between overweight and the following other risk factors: acute drinking, hypertension, and sedentary lifestyle. For example, there were almost twice as many overweight adults who had hypertension (25.5%) than non-overweight adults (12.8%).

Table D.3

Percentage of Respondents With Other Risk Factors by Weight Status State of Hawaii, 1988

Weight Status	Other Risk Factors						
	Seatbelt Nonuse	Hyper-tension	Smoking	Seden-tary	Acute Drinking	Chronic Drinking	Drinking & Driving
Overweight	7.5	25.5	24.8	63.2	22.4	11.2	5.5
Not Overweight	6.1	12.8	23.2	51.6	19.2	8.9	3.2

Sodium Use

A high sodium intake contributes to poor blood pressure control in those people who are sensitive to sodium. Due to Hawaii's ethnic diversity, several high sodium seasonings are widely used. As a result, questions on use of shoyu and fish sauce, in addition to salt, were added. For the purposes of data collection and analysis, "shoyu" use included fish sauce use.

Table D.4 shows that more than half of Hawaii's residents add salt and/or shoyu "most of the time or sometimes" to their food at the table. Statistically significant differences were found by sex and race. No significant differences were found by age.

(1) **Sex:** Males (66.6%) had high sodium intake.

(2) **Race:** Filipinos (66.9%), Japanese (64.9%), and Hawaiians/Part-Hawaiians (64.6%) had high sodium intake.

Table D.4

Percentage of the Adult Population With A High Sodium Diet[2] by Demographic Characteristics State of Hawaii, 1988

Demographic Characteristic	N[1]	High Sodium Diet[2] Percent
All Respondents	**1865**	**58.8**
Sex		
Female	1026	51.2
Male	839	66.6
Age		
18-24	204	61.5
25-34	468	64.2
35-44	455	59.3
45-54	233	51.5
55-64	226	55.6
65+	279	54.2
Race		
Caucasian	667	48.8
Filipino	217	66.9
Hawaiian/Part-Hawaiian	338	64.6
Japanese	462	64.9
Others	181	52.5

[1] Unweighted sample size used as the denominator for each estimate.

[2] High sodium diet defined as adding salt and/or shoyu "most of the time or sometimes" to their food at the table.

Survey Results
E. TOBACCO USE

Smoking is the single most important preventable cause of death and disability in the U.S. (1). At least 85% of all lung cancer cases in the U.S are caused by cigarette smoking, and smoking is directly related to cancers of the larynx, oral cavity, pancreas and bladder (6). In the U.S., smoking is responsible for 80%-90% of all chronic obstructive pulmonary diseases (COPD), such as emphysema and chronic bronchitis (7). Even in the absence of other risk factors, smoking nearly doubles the risk of heart attack for men (1). Smoking during pregnancy is associated with retarded fetal growth, spontaneous abortion, prenatal death, and impairment of growth and development during early childhood (15).

Fortunately, quitting smoking has definite health benefits. Within two years after quitting, an ex-smoker's risk of heart disease is reduced substantially (1). Ex-smokers also show a lower risk than smokers in COPD related deaths, although not as low as nonsmokers (7).

Hawaii's goal for the 1990 Objectives is to reduce the proportion of adults who smoke to less than 20%. In 1988, the proportion of Hawaii adult residents who reported current smoking was 23.2%, which was lower than the National 1990 Objective of 25%, but still above Hawaii's 1990 Objective.

Of the 37 states participating in the Behavioral Risk Factor Surveillance System, Hawaii had one of the lower prevalences of smoking (for the participating states: range 14.7% - 34.2%; median 24.3%; mean 23.8%).

The Centers for Disease Control defines those individuals at risk from cigarette smoking as "respondents who report current regular smoking" (smoked 100 cigarettes and smokes regularly now). Table E.1 shows the percentage of current smokers by demographic characteristics. Statistically significant differences in smoking were found in the following variables:

(1) **Sex:** Men (26.2%) had a slightly higher percentage of smokers than women (20.3%).

(2) **Age:** The percentage of cigarette smoking increased with age until the 35-44 year old age group, and then decreased.

(3) **Race:** Hawaiian/Part-Hawaiian (31.7%) and Caucasians (24.8%) had the highest percentages.

(4) **Education:** Although there was no trend by education level, those with some high school (31.5%), high school graduates (28.2%), and those with some college (26.2%) had the highest percentages.

(5) **Employment Status:** The unemployed (36.2%) and those employed for wages (25.6%) had the highest percentages of smokers.

(6) **Marital Status:** The separated (44.6%), divorced (31.8%), and members of an unmarried couple (27.6%) had the highest percentages.

(7) **Household Income:** Although there was no trend by household income, those making $15,000-$20,000 (34.8%) had the highest percentage.

Differences by island in the percentage of adults who smoke were not statistically significant.

Table E.1

Prevalence of Smoking[1] by Demographic Characteristics, State of Hawaii, 1988

Demographic Characteristic	N[2]	Percent[3]
All Respondents	**1865**	**23.2**
Island		
Hawaii	215	21.4
Kauai	215	21.0
Maui	216	26.6
Molokai/Lanai	216	20.8
Oahu	1003	23.3
Sex		
Female	1026	20.3
Male	839	26.2
Age		
18-24	204	20.5
25-34	468	28.6
35-44	455	28.7
45-54	233	23.2
55-64	226	19.6
65+	279	11.0
Race		
Caucasian	667	24.8
Filipino	217	20.7
Hawaiian/Part-Hawaiian	338	31.7
Japanese	462	22.6
Others	181	15.1
Education		
Eighth Grade or Less	136	12.2
Some High School	170	31 5
High Sch Grad/GED Certif	610	28.2
Some Tech Sch/Tech Sch Grad	52	22.0
Some College	437	26.2
College Graduate	319	14.1
Post Grad/Prof Degree	137	9.2
Employment Status		
Employed for Wages	1085	25.6
Self Employed	176	18.3
Unemployed	82	36.2
Homemaker	141	19.0
Student	62	22.0
Retired	316	14.8
Married Status		
Married	1128	22.8
Divorced	163	31.8
Widowed	125	9.3
Separated	45	44.6
Never Married	369	22.7
Unmarried Couple	29	27.6
Household Income		
Less than $10,000	251	21.3
$10,000 < $14,999	242	23.3
$15,000 < $19,999	220	34.8
$20,000 < $24,999	206	22.9
$25,000 < $34,999	256	20.8
$35,000 < $49,999	249	23.1
Over $50,000	246	18.6

[1] Current smoker is defined as having smoked 100 cigarettes and smokes regularly now.

[2] Unweighted sample size used as the denominator for each estimate. The total for each group may not equal 1865 because of a response of "refused" or "unknown" for that demographic variable.

[3] All percents weighted to be representative of the age, sex, and race distribution of Hawaii.

Of those respondents who reported to be current regular smokers, 50.4% smoked less than one pack daily, 42.4% smoked two packs daily, and 6.0% smoked more than two packs a day. Table E.2 shows the average number of cigarettes smoked daily by selected demographic characteristics. Differences by sex, race, and age were found to be statistically significant.

(1) **Sex:** Men were heavier smokers than women. 46.3% of the male smokers reported smoking 1-2 packs per day while most female smokers (56.4%) reported smoking less than one pack per day.

(2) **Age:** Over half of the 18-24 year olds smoked less than one pack per day. The majority of smokers in the 25-34 year age group smoked 1-2 packs per day. While the percentage of smokers who smoked more than two packs per day was low, it did increase with age.

(3) **Race:** Hawaiians/Part-Hawaiians (61.7%) and Filipinos (61.0%) smoked less than one pack more frequently than the other race groups. Caucasians smoked 1 to 2 packs (12.8%) more frequently than the other race groups.

Table E.2

Percentage of Smokers by Number of Cigarettes Smoked Daily by Demographic Characteristics State of Hawaii, 1988

Demographic Characteristic	N[1]	Average Number of Cigarettes Smoked Daily		
		< 1 Pack (%)[2]	1-2 Packs (%)	> 2 Packs (%)
All Current Smokers	**448**	**50.4**	**42.4**	**6.0**
Sex				
Female	217	56.4	37.5	5.1
Male	231	45.6	46.3	6.8
Age				
18-34	42	65.5	31.6	1.2
25-34	134	48.5	49.1	2.4
35-44	134	46.2	44.8	8.2
45-54	57	44.1	38.4	12.5
55-64	48	50.8	41.2	7.9
65+	33	50.1	37.2	12.7
Race				
Caucasian	171	33.7	52.9	12.8
Filipino	45	61.0	31.5	2.0
Hawaiian/Part-Hawaiian	107	61.7	34.2	4.6
Japanese	93	53.5	43.9	2.6
Others	31	55.5	40.4	0.0

[1] Unweighted sample size used as the denominator for each estimate.

[2] All percents weighted to be representative of the age, sex, and race distribution of Hawaii. Percents may not sum to 100% because of "don't know/not sure" or "refused" responses to that particular question.

Almost half of Hawaii's smokers (47.7%) indicated that they had stopped smoking for at least one week during the past year. Table E.3 shows the percentage of adults who stopped smoking for a week or more during the past year by selected demographics. Differences by age were found to be significant.

Age: Except for the 55-64 year age group, the percentage of those who attempted to quit generally decreased by age.

Differences found by sex and race were not statistically significant.

Table E.3

Percentage of Smokers Who Stopped Smoking for a Week or More During the Past Year by Demographic Characteristics State of Hawaii, 1988

Demographic Characteristic	N[1]	Percent[2]
All Current Smokers	**453**	**47.7**
Sex		
Female	219	44.3
Male	234	50.3
Age		
18-34	43	59.0
25-34	135	53.8
35-44	135	43.7
45-54	59	33.4
55-64	48	47.1
65+	33	33.4
Race		
Caucasian	173	41.7
Filipino	46	40.4
Hawaiian/Part-Hawaiian	109	49.7
Japanese	93	54.0
Others	31	56.8

[1] Unweighted sample size used as the denominator for each estimate.

[2] Percents weighted to be representative of the age, sex, and race distribution of Hawaii.

The smoking status of the Hawaii adult population is presented in table E.4. Of the adult population, close to half (44.1%) reported smoking at least 100 cigarettes in their lifetime (ever smokers), 23.5% reported they currently smoke, and 20.6% reported being former smokers. The percentage of former smokers increased with age from 8% for the 18-24 year age group to 32.6% for the 55-64 year age group, and decreased slightly to 27.1% for the 65 and over age group.

As to success in quitting, the quit ratio, which is defined as the ratio of former smokers to ever smokers, indicates that men have quit at a slightly higher rate than women. Of all the males who have ever smoked at least 100 cigarettes, almost one-half have quit (48.2%). In contrast, of all the females who have ever smoked 100 cigarettes, only forty-four percent quit. National data also seems to indicate that more men are quitting smoking than women, and that smoking cessation seems more difficult for women to accomplish than men.

Table E.4

Smoking Prevalence and Cessation by Sex and Age State of Hawaii, 1988

Demographic Characteristic	Ever Smoked[1] (%)	Current Smoker[2] (%)	Former Smoker[3] (%)	Quit Ratio[4] (%)
All Respondents	**44.2**	**23.3**	**20.6**	**46.6**
Sex				
Female	37.1	20.4	16.6	44.7
Male	51.4	26.3	24.8	48.2
Age				
18-24	28.9	20.6	8.0	27.7
25-34	44.8	28.6	16.1	35.9
35-44	53.5	28.9	24.4	45.6
45-54	48.7	23.3	24.2	49.7
55-64	52.2	19.6	32.6	62.5
65+	38.5	11.1	27.4	71.2

[1] Ever Smoker: A respondent who reported smoking 100 or more cigarettes in his or her lifetime.

[2] Current Smoker: A respondent who had smoked 100 or more cigarettes and smokes regularly now. This percentage excludes those individuals who do not smoke regularly (0.3%).

[3] Former Smoker: A respondent who was not currently smoking, but who reported having smoked 100 or more cigarette during his or her lifetime.

[4] Quit Ratio: The ratio of "former smokers" to "ever smokers".

In an attempt to examine which risk factors are associated with smoking, a pairwise comparison for each risk factor was performed. Table E.5 shows the percentage of other risk factors present among current smokers in comparison to those who do not smoke. Statistically significant associations were found between smoking and the following other health risk behaviors: all three drinking behaviors (binge drinking, chronic drinking and drinking and driving), and seatbelt nonuse. That is, a greater percentage of smokers than nonsmokers reported the following behaviors: binge drinking, chronic drinking, drinking and driving, and seatbelt nonuse. For example, smokers were over two times as likely as non-smokers to binge drink and for seatbelt nonuse, and over two and a half times as likely to report chronic drinking, and drinking and driving as nonsmokers.

Table E.5

Percentage of Respondents With Other Risk Factors by Smoking Status State of Hawaii, 1988

Smoking Status	Other Risk Factors						
	Seatbelt Nonuse (%)	Hyper-tension (%)	Over-weight (%)	Seden-tary (%)	Acute Drinking (%)	Chronic Drinking (%)	Drinking & Driving (%)
Smokers	10.6	15.4	20.7	59.1	34.0	18.2	7.2
Non-Smokers	5.0	15.2	19.0	52.6	15.2	6.4	2.5

Smokeless Tobacco

Studies have shown that smokeless tobacco use is associated with an increased risk of oral cancer and periodontal disease. The Centers for Disease Control defines those at risk from smokeless tobacco as "respondents who currently use smokeless tobacco."

The prevalence of smokeless tobacco use in Hawaii was 0.7%. Because the number of respondents at risk for smokeless tobacco use was extremely small (N=14), demographic comparisons were not made.

Survey Results
F. ALCOHOL USE

Alcohol abuse or dependence is a leading risk factor for a number of health problems that include mental illness, gastrointestinal diseases, fetal alcohol syndrome, cardiomyopathy (damage to the heart muscle) suicide, certain cancers (liver, esophagus and mouth) falls, burns and injuries in motor vehicle crashes (16). In Hawaii, cirrhosis of the liver, a condition largely attributable to alcohol use, was the tenth leading cause of death in 1988. Furthermore, alcohol abuse is a factor in more than 10 percent of all deaths in the U.S., and is associated with half of all traffic deaths (1).

Three definitions of alcohol related behaviors that place a person at risk are used in this report: acute drinking (also called binge drinking), chronic drinking, and drinking and driving.

1. Acute Drinking (Binge Drinking)

The Centers for Disease Control defines acute drinking as having five or more drinks on an occasion, one or more times during the past month.

In 1988, the prevalence of acute drinking in Hawaii was 19.6%. Of the 37 states participating in the Behavioral Risk Factor Surveillance System, Hawaii had one of the highest prevalences of acute drinking (for the participating states: range 7.1%-25.3%; median, 15.3%; mean, 15.2%).

Table F.1 shows the percentage of adults who reported acute drinking by demographic characteristics. Differences in acute drinking were statistically significant in the following demographic groups:

(1) Sex: The percentage of acute drinking for males

(30.1%) was more than three times greater than that for females (9.4%).

(2) **Age:** The percentage of acute drinking decreased with age, from a high of 28.0% for the 18-24 year age group to a low of 7.0% for the 65 and over age group, a four-fold decrease.

(3) **Race:** Hawaiians/Part-Hawaiians (25.9%) and Caucasians (23.6%) had the highest percentages.

(4) **Education:** While no trend was found, those with some technical school (26.0%), high school graduates (23.8%), and those with some high school (21.3%) had the highest percentages.

(5) **Employment Status:** Students (25.3%), unemployed persons (23.7%), and persons employed for wages (22.7%) had the highest percentages.

(6) **Marital Status:** Those who were separated (33.6%), never married (27.3%), and a member of an unmarried couple (25.7%) had the highest percentages.

(7) **Household Income:** Although no trend was observed, those making $15,000-$20,000 (25.5%), $25,000-$35,000 (23.6%), and $10,000-$15,000 (21.2%) had the highest percentages.

Differences in acute drinking by island was not significant.

Table F.1

Prevalence of Acute Drinking[1] by Demographic Characteristics, State of Hawaii, 1988

Demographic Characteristic	N[2]	Percent[3]
All Respondents	**1865**	**19.6**
Island		
Hawaii	215	24.4
Kauai	215	16.2
Maui	216	28.4
Molokai/Lanai	216	18.2
Oahu	1003	18.4
Sex		
Female	1026	9.4
Male	839	30.1
Age		
18-24	204	28.0
25-34	468	21.8
35-44	455	20.2
45-54	233	18.8
55-64	226	14.9
65+	279	7.0
Race		
Caucasian	667	23.6
Filipino	217	16.1
Hawaiian/Part-Hawaiian	338	25.9
Japanese	462	18.8
Others	181	10.2
Education		
Eighth Grade or Less	136	3.3
Some High School	170	21.3
High Sch Grad/GED Certif	610	23.8
Some Tech Sch/Tech Sch Grad	52	26.0
Some College	437	19.2
College Graduate	319	16.2
Post Grad/Prof Degree	137	17.6
Employment Status		
Employed for Wages	1085	22.7
Self Employed	176	19.5
Unemployed	82	23.7
Homemaker	141	3.5
Student	62	25.3
Retired	316	10.8
Married Status		
Married	1128	17.4
Divorced	163	20.2
Widowed	125	3.3
Separated	45	33.6
Never Married	369	27.3
Unmarried Couple	29	25.7
Household Income		
Less than $10,000	251	14.0
$10,000 < $14,999	242	21.2
$15,000 < $19,999	220	25.5
$20,000 < $24,999	206	17.7
$25,000 < $34,999	256	23.6
$35,000 < $49,999	249	20.1
Over $50,000	246	18.3

[1] Acute Drinking, also called binge drinking, is defined as having 5 or more drinks on a given occasion, one or more times in the past month.

[2] Unweighted sample size used as the denominator for each estimate. The total for each group may not equal 1865 because of a response of "refused" or "unknown" for that demographic variable.

[3] All percents weighted to be representative of the age, sex, and race distribution of Hawaii.

In an attempt to examine which risk factors are associated with acute drinking, a pairwise comparison for each risk factor was performed. Table F.2 shows the percentage of other risk factors present among people who binge drink in comparison to those who do not binge drink. Acute drinking was found to be significantly associated with the following other risk factors: seatbelt nonuse, cigarette smoking, overweight, chronic drinking and drinking and driving. For example, binge drinkers were twice as likely to smoke (40.2%) as those who were not binge drinkers (18.6%).

In addition, acute drinking was also found to be inversely associated with hypertension. For example, only 12.1% of the binge drinkers were hypertensive, while only 16.0% of the non-binge drinkers were hypertensive. This is, however confounded with age. That is, both acute drinking and hypertension are associated with age and not necessarily with each other. A higher percentage of younger people binge drink whereas a higher percentage of older people are hypertensive.

Table F.2

Percentage of Respondents With Other Risk Factors by Acute Drinking Status State of Hawaii, 1988

Acute Drinking Status	Other Risk Factors						
	Seatbelt Nonuse (%)	Hyper-tension (%)	Over-weight (%)	Smoking (%)	Seden-tary (%)	Chronic drinking (%)	Drinking & driving (%)
Acute Drinking	16.3	12.1	22.2	40.2	53.1	36.8	17.0
No Acute Drinking	3.9	16.0	18.7	18.6	54.8	1.6	0.3

2. Chronic Drinking

The Centers for Disease Control defines chronic drinking as having 60 or more drinks during the past month. Research has shown that individuals with alcohol consumption at this level or greater contribute disproportionately to alcohol-related morbidity and mortality (17).

In 1988, the prevalence of chronic drinking in Hawaii was 9.2%, one of the highest prevalences for the 37 states that participated in the Behavioral Risk Factor Surveillance System (for the participating states: range, 3.3%-10.8%; median, 5.8%; mean, 6.0%).

Table F.3 shows the prevalence of chronic drinking by demographic characteristics. Statistically significant differences in chronic drinking were found in the following demographic variables:

(1) **Sex:** Men (16.0%) had over six times the percentage of chronic drinking as women (2.4%).

(2) **Race:** Hawaiians/Part-Hawaiians (11.6%) and Caucasians (9.9%) had the highest percentages.

(3) **Employment Status:** The self employed (14.5%) and the unemployed (11.2%) had the highest percentages of adults who reported chronic drinking.

(4) **Marital Status:** Those who were separated (15.0%) and divorced (13.8%) had the highest percentages.

Differences in chronic drinking by island, age, education and household income were not statistically significant.

Table F.3

Prevalence of Chronic Drinking[1] by Demographic Characteristics, State of Hawaii, 1988

Demographic Characteristic	N[2]	Percent[3]
All Respondents	**1865**	**9.2**
Island		
Hawaii	215	10.2
Kauai	215	5.4
Maui	216	14.3
Molokai/Lanai	216	8.2
Oahu	1003	8.8
Sex		
Female	1026	2.4
Male	839	16.0
Age		
18-24	204	9.5
25-34	468	8.5
35-44	455	10.1
45-54	233	10.4
55-64	226	9.1
65+	279	7.5
Race		
Caucasian	667	9.9
Filipino	217	9.2
Hawaiian/Part-Hawaiian	338	11.6
Japanese	462	9.1
Others	181	5.3
Education		
Eighth Grade or Less	136	1.6
Some High School	170	13.1
High Sch Grad/GED Certif	610	10.5
Some Tech Sch/Tech Sch Grad	52	5.4
Some College	437	11.0
College Graduate	319	5.0
Post Grad/Prof Degree	137	9.4

Demographic Characteristic	N[2]	Percent[3]
Employment Status		
Employed for Wages	1085	9.1
Self Employed	176	14.5
Unemployed	82	11.2
Homemaker	141	2.0
Student	62	6.8
Retired	316	10.8
Married Status		
Married	1128	8.4
Divorced	163	13.8
Widowed	125	3.6
Separated	45	15.0
Never Married	369	10.6
Member of an Unmarried Couple	29	10.3
Household Income		
Less than $10,000	251	3.4
$10,000 < $14,999	242	10.5
$15,000 < $19,999	220	10.2
$20,000 < $24,999	206	9.5
$25,000 < $34,999	256	11.0
$35,000 < $49,999	249	9.5
Over $50,000	246	8.9

[1] Chronic Drinking is defined as having 2 or more drinks per day for the past month.

[2] Unweighted sample size used as the denominator for each estimate. The total for each group may not equal 1865 because of a response of "refused" or "unknown" for that demographic variable.

[3] Percents weighted to be representative of the age, sex, and race distribution of Hawaii.

In an attempt to examine which risk factors are associated with chronic drinking, a pairwise comparison for each risk factor was performed. Table F.4 shows the percentage of other risk factors present among people who reported chronic drinking in comparison to those who did not. Chronic drinking was found to be significantly associated with the following other risk factors: seatbelt nonuse, cigarette smoking, acute drinking and drinking and driving. For example, chronic drinkers were over five times as likely to report seatbelt nonuse (24.5%) as those who were not chronic drinkers (4.5%).

Table F.4

Percentage of Respondents With Other Risk Factors by Chronic Drinking Status State of Hawaii, 1988

Chronic Drinking Status	Other Risk Factors						
	Seatbelt Nonuse (%)	Hyper-tension (%)	Over-weight (%)	Smoking (%)	Seden-tary (%)	Acute drinking (%)	Drinking & driving (%)
Chronic Drinking	24.5	17.9	23.6	46.1	52.9	78.7	15.3
No Chronic Drinking	4.5	15.0	8.9	20.9	54.3	13.6	2.4

3. Drinking and Driving

The Centers for Disease Control defines drinking and driving as driving after having had too much to drink, one or more times during the past month.

In 1988, the overall prevalence of drinking and driving for Hawaii's adults was 3.4%, about average for the 32 states that participated in the BRFSS (for the participating states: range, 1.4%-8.8%); median, 3.2%; mean, 3.5%).

Table F.5 shows the prevalence of drinking and driving by demographic characteristics. Statistically significant differences were found in the following demographic variables:

(1) **Island:** Hawaii (7.5%), and Maui (6.4%) had the highest percentages, more than one and a half times the state prevalence.

(2) **Sex:** Men (6.1%) reported drinking and driving at percentages over five times that of women (1.2%).

(3) **Age:** The percentage of drinking and driving decreased with age, from 6.5% for the 18-24 year age group to 0.03% for the 65 and over age group.

(4) **Employment Status:** Persons self employed (4.9%) and those employed for wages (4.6%) and students (4.1%) had the highest percentages.

(5) **Marital Status:** Those who are a member of an unmarried couple (20.4%), separated (9.6%), and never married (5.1%) had the highest percentages.

Differences in the prevalence of drinking and driving by race, education, and household income were not statistically significant.

Table F.5

Prevalence of Drinking & Driving[1] by Demographic Characteristics, State of Hawaii, 1988

Demographic Characteristic	N[2]	Percent[3]
All Respondents	**1865**	**3.6**
Island		
Hawaii	215	7.5
Kauai	215	3.2
Maui	216	6.4
Molokai/Lanai	216	2.1
Oahu	1003	2.9
Sex		
Female	1026	1.2
Male	839	6.1
Age		
18-24	204	6.5
25-34	468	3.9
35-44	455	5.0
45-54	233	2.5
55-64	226	0.9
65+	279	0.8
Race		
Caucasian	667	4.7
Filipino	217	3.4
Hawaiian/Part-Hawaiian	338	4.5
Japanese	462	2.5
Others	181	2.6
Education		
Eighth Grade or Less	136	0.1
Some High School	170	4.5
High Sch Grad/GED Certif	610	4.8
Some Tech Sch/Tech Sch Grad	52	0.0
Some College	437	3.4
College Graduate	319	2.6
Post Grad/Prof Degree	137	4.6

Demographic Characteristic	N[2]	Percent[3]
Employment Status		
Employed for Wages	1085	4.6
Self Employed	176	4.9
Unemployed	82	1.2
Homemaker	141	0.2
Student	62	4.1
Retired	316	1.8
Married Status		
Married	1128	2.7
Divorced	163	4.0
Widowed	125	0.0
Separated	45	9.6
Never Married	369	5.1
Unmarried Couple	29	20.4
Household Income		
Less than $10,000	251	3.1
$10,000 < $14,999	242	6.2
$15,000 < $19,999	220	4.0
$20,000 < $24,999	206	2.2
$25,000 < $34,999	256	3.7
$35,000 < $49,999	249	5.7
Over $50,000	246	2.1

[1] Drinking and Driving is defined as driving after having too much to drink, one or more times during the past month.

[2] Unweighted sample size used as the denominator for each estimate. The total for each group may not equal 1865 because of a response of "refused" or "unknown" for that demographic variable.

[3] Percents weighted to be representative of the age, sex, and race distribution of Hawaii.

In an attempt to examine which risk factors were associated with drinking and driving, a pairwise comparison for each risk factor was performed. Table F.6 shows the percentage of other risk factors present among those who drink and drive in comparison to those who do not. Drinking and driving was significantly associated with the following other risk factors: seatbelt nonuse, cigarette smoking, acute drinking, and chronic drinking. For example, the percentage of people who drink and drive and don't use seatbelts (28.0%) is about five times higher than those who don't drink and drive and report seatbelt nonuse (5.5%).

Table F.6

Percentage of Respondents With Other Risk Factors by Drinking & Driving Status State of Hawaii, 1988

Drinking & Driving Status	Other Risk Factors						
	Seatbelt Nonuse (%)	Hyper-tension (%)	Over-weight (%)	Smoking (%)	Seden-tary (%)	Acute drinking (%)	Chronic drinking (%)
Drinking & Drivng	28.0	17.1	29.7	46.2	43.0	92.5	39.0
No Drinking & Driving	5.5	15.1	19.0	22.3	54.5	16.8	7.9

4. Drinking Prevalence in Hawaii

More than one half of all Hawaii adult residents (53.4%) had reported consuming beer, wine or liquor during the past month (table F.7). Differences by sex, age and race were statistically significant.

(1) **Sex:** A greater percentage of men (62.8%) consumed alcoholic beverages during the past month than women (44.1%).

(2) **Age:** In general, the percentage of those who drank during the past month decreased, from 60.5% for those 25-34 years of age to 29.9% for those 65 years of age and older.

(3) **Race:** The highest percentage of adults who reported drinking during the past month were Caucasians (68.5%).

Table F.7

Percentage of Adult Population Drinking Beer, Wine or Liquor During the Past Month by Sex, Age, and Race State of Hawaii, 1988

Demographic Characteristic	Drank Beer, Wine or Liquor During the Past Month	
	N[1]	Percent[2]
All Respondents	**1865**	**53.4**
Sex		
Female	1026	44.1
Male	839	62.8
Age		
18-34	204	60.5
25-34	468	59.7
35-44	455	59.9
45-54	233	57.7
55-64	226	38.2
65+	279	29.9
Race		
Caucasian	667	68.5
Filipino	217	42.1
Hawaiian/Part-Hawaiian	338	51.0
Japanese	462	47.8
Others	181	48.1

[1] Unweighted sample size used as the denominator for each estimate.

[2] Percents weighted to be representative of the age, sex, and race distribution of the population of Hawaii.

Survey Results
G. PREVENTIVE HEALTH PRACTICES

A Preventative Health Practices Module, initiated in 1987, was included in the 1988 survey. Questions asked were about routine checkups, cholesterol, and diabetes.

1. Routine Checkups

Overall, 70.4% of Hawaii's adult population had a routine checkup within the past year, while 0.5% never had one.

Table G.1 shows the percentage of adults who had a routine checkup and when they had it, by selected demographics. Statistically significant differences by sex, age, and race were found according to when the routine checkup was performed.

(1) **Sex:** The majority of both sexes had a routine checkup within the past year (females, 77.0% and males, 63.8%).

(2) **Age:** For all age groups, the majority of people had a routine checkup within the past year. The older age groups had the highest percentages.

(3) **Race:** For all races, the majority of people had a routine checkup within the past year. Filipinos (78.7%) and Hawaiians/Part-Hawaiians (71.6%) had the highest percentages having a routine checkup within the past year.

Table G.1

Length of Time Since Last Routine Medical Checkup by Demographic Characteristics State of Hawaii, 1988

	N Total Population	0-12 Months Ago	13-60 Months Ago	61+ Months Ago	Never
Sex					
Female	1026	77.0	15.6	6.7	0.5
Male	839	63.8	26.7	8.4	0.6
Age					
18-24	204	65.6	24.9	7.6	1.4
25-34	468	64.6	26.3	8.1	0.4
35-44	455	64.1	24.3	11.3	0.1
45-54	233	77.8	15.4	6.0	0.4
55-64	226	74.3	18.0	6.9	0.6
65+	279	87.4	9.1	3.1	0.0
Race					
Caucasians	667	66.5	24.7	8.3	0.4
Filipino	217	78.7	15.0	6.3	0.0
Hawaiian/Part-Hawaiian	338	71.6	19.6	7.8	0.4
Japanese	462	67.7	22.4	9.3	0.3
Other	181	73.0	20.0	3.9	1.8
Total Respondents	**1865**	**70.4**	**21.1**	**7.5**	**0.5**

2. Cholesterol

Elevated blood cholesterol is a major risk factor for coronary heart disease (CHD), the leading cause of death in the U.S. claiming an estimated 550,000 deaths each year (6). Current studies indicate that a 1% decline in serum cholesterol results in a 2% decline in the risk of getting cardiovascular disease (18).

In 1987, the National Cholesterol Education Program, initiated by the National Institutes of Health, set new guidelines concerning cholesterol level and risk of cardiovascular disease. In the simplified guidelines, a serum cholesterol level of 240 mg/dl or greater is considered "high"; 200 to 239 mg/dl is considered "borderline -high"; and less than 200 mg/dl is considered "desirable" (18).

Almost half (47.4%) of Hawaii's adult population reported having had their blood cholesterol tested. For the 37 states that participated in the 1988 Behavioral Risk Factor Surveillance System (BRFSS), the range was 40.5%-58.2%, the median was 49.8% and the mean was 50.5%.

Twenty eight percent of Hawaii's adults reported that they had been told their cholesterol level in numbers. For the BRFSS states, the range was 17.8%-39.6%, the median was 28.7%, and the mean was 28.1%.

Only 12.6% percent of all adults in Hawaii were able to provide a value for their cholesterol level. For the BRFSS states, the range was 6.8%-22.7%, the median was 13.2%, and the mean was 13.8%.

Table G.2 shows the cholesterol awareness of Hawaii's adult population by selected demographics. Statistically significant differences by age and race were found in the percentage of people tested, and in the percentage of people who knew their cholesterol level. In addition, statistically significant differences by sex, age, and race were found in the percentage of people who were told their cholesterol level.

(1) **Sex:** A slightly greater percentage of males (12.7%) than females (12.3%) were told their cholesterol level in numbers.

(2) **Age:** In general, as age increased so did the percentage of those people who had their cholesterol checked, who were told their cholesterol level, and who knew their cholesterol level.

(2) **Race:** Caucasians and Japanese had the highest proportion of adults tested for cholesterol, told their cholesterol level, and who knew their cholesterol level.

No significant differences by island were found. In addition, no significant differences were found by sex in the percentage of adults who had their cholesterol checked or who could state a value for their cholesterol level.

Table G.2

Cholesterol Awareness by Demographic Characteristics State of Hawaii, 1988

	N[1]	Had their Cholesterol Checked (%)[2]	Told their Cholesterol Level (%)	Know their Cholesterol Level (%)
All Respondents	**1865**	**47.4**	**28.0**	**12.6**
Island				
Hawaii	215	44.2	26.1	12.2
Kauai	215	43.9	24.62	10.3
Maui	216	49.6	21.1	7.0
Molokai/Lanai	216	53.4	31.9	10.2
Oahu	1003	47.3	28.7	13.4
Sex				
Female	1026	44.8	12.3	10.6
Male	839	49.9	12.7	14.7
Age				
18-24	204	17.1	6.1	2.2
25-34	468	36.0	19.6	6.5
35-44	455	48.7	35.6	15.6
45-54	233	62.1	39.0	18.3
55-64	226	71.9	40.7	20.6
65+	279	72.8	42.8	22.7
Race				
Caucasian	667	53.0	34.5	18.9
Filipino	217	31.6	14.5	3.0
Hawaiian/Part-Hawaiian	338	41.1	21.2	5.4
Japanese	462	50.8	32.1	15.8
Others	181	54.0	29.6	12.2

[1] Unweighted sample size used as the denominator for each estimate.

[2] All percents weighted to be representative of the age, sex and race distribution of Hawaii.

[3] Percentages of those adults who responded "don't know" or "not sure" when asked of they ever had their cholesterol checked.

Table G.3 shows the percentage of respondents who were told that their cholesterol level is high (respondents who reported that they had their cholesterol checked and that a doctor or other health professional had told them that it was high). About one out of every four respondents (26.5%) who had their blood cholesterol checked were told that it was high. Statistically significant associations between being told their cholesterol is high and age and race were found.

(1) **Age:** In general, the percentage of respondents who were told their cholesterol is high increased with age, from 8.4% for those 18-24 years of age to 33.7% for those 65 and over.

(2) **Race:** Japanese (35%) had the highest percentage of adults who were told their cholesterol level is high.

Differences by island and sex in the percentage of respondents who were told their cholesterol is high were not statistically significant.

Table G.3

Percentage of Respondents Who Were Told Their Cholesterol is High by Demographic Characteristics, State of Hawaii, 1988

	N[1]	Percent[2]
All Respondents Who Were Told Their Cholesterol Level	**929**	**26.5**
Island		
Hawaii	100	25.5
Kauai	102	26.1
Maui	108	23.9
Molokai and Lanai	115	32.7
Oahu	504	26.4
Sex		
Female	497	27.5
Male	432	25.5
Age		
18-24	43	8.4
25-34	165	14.9
35-44	208	23.6
45-54	152	30.7
55-64	164	36.4
65+	197	33.7
Race		
Caucasian	357	24.5
Filipino	77	23.8
Hawaiian/Part-Hawaiian	142	21.7
Japanese	253	35.0
Others	100	20.9

[1] Unweighted sample size used as the denominator for each estimate.

[2] Percents weighted to be representative of the age, sex and race distribution of Hawaii.

Table G.4 shows that overall, only 21.3% of those who ever had their cholesterol checked were now under the advice of a doctor to reduce their blood cholesterol or blood fat level. Statistical associations between now being under the advice of a doctor to reduce their cholesterol level and age and race were found.

(1) **Age:** Except for the 25-34 year age group, the percentage of respondents under the advice of a doctor to reduce their blood cholesterol level increased with age.

(2) **Race:** Japanese (25.9%) and Hawaiians/Part-Hawaiians (22.9%) had the highest percentages of adults advised to reduce their cholesterol level.

Differences by sex or island in the percentage of respondents now under the advice of a doctor to lower their cholesterol level were not statistically significant.

Table G.4 also shows the methods used by those respondents who are now under the advice of a doctor to reduce their cholesterol level. Overall, 36.1% were prescribed medication, 67.5% were on a low fat or low cholesterol diet, and 21.4% were referred to a dietician or nurse to help them reduce fat or cholesterol in their diet.

Table G.4

Percentage of Respondents With High Cholesterol Levels Under Medical Advise to Reduce Blood Cholesterol/Fat Levels According to Method of Reducing Levels by Demographic Characteristics State of Hawaii, 1988

	N	Now Under Doctor's Advise to Reduce Blood Chol/Fat Level (%)	N	Method of Reducing Levels: Prescribed Medication (% Yes)	Low Fat/Chol Diet (%)	Referred to dietician or nurse (%)
Island						
Hawaii	100	18.5	19	32.5	37.1	18.7
Kauai	102	18.3	23	44.0	82.9	26.8
Maui	108	23.1	26	61.0	78.5	29.9
Molokai and Lanai	115	31.2	31	29.5	74.4	31.3
Oahu	504	20.8	105	34.3	68.7	19.8
Sex						
Female	497	23.3	113	29.5	66.2	19.4
Male	432	19.4	91	43.3	68.9	23.6
Age						
18-24	43	9.6	3	43.5	43.5	43.5
25-34	165	7.0	13	8.6	56.7	20.7
35-44	208	15.9	31	29.9	89.2	21.6
45-54	152	25.7	37	20.5	72.6	34.6
55-64	164	29.9	53	47.8	56.1	15.8
65+	197	33.0	67	46.1	69.5	13.9
Race						
Caucasian	357	18.6	70	22.7	67.4	11.7
Filipino	77	21.3	19	43.9	69.1	22.7
Hawaiian/ Part-Hawaiian	142	22.9	27	54.4	64.8	35.0
Japanese	253	25.9	72	34.1	61.4	21.7
Other	100	17.1	16	45.2	85.6	26.4
All High Blood Cholesterol Respondents	**929**	**21.3**	**204**	**36.1**	**67.5**	**21.4**

3. Diabetes

Overall, 6.7% of the respondents reported having ever been told by a doctor that they have diabetes. Table G.5 shows the percentage of respondents who have ever been told by a doctor that they have diabetes by selected demographic characteristics. Statistically significant associations were found between ever having been told by a doctor that they have diabetes and island, age, and race.

(1) **Island:** The highest percentages of people having been told they have diabetes were found on Kauai (12.8%) and Molokai/Lanai (11.2%).

(2) **Age:** The percentages increased by age, from a low of 1.1% for the 18-24 year old age group to a high of 15.2% for the 65 years and over age group. This is an increase of over thirteen times.

(3) **Race:** Japanese (8.6%), Filipinos (7.9%), and Hawaiians/Part-Hawaiians (7.9%) had the highest percentages people of having ever been told that they have diabetes.

Table G.5

Percentage of Respondents Who Have Ever Been Told by a DoctorThat They Have Diabetes State of Hawaii, 1988

Demographic Characteristics	N[1]	Yes[2] (%)
Total Respondents	**1865**	**6.7**
Island		
Hawaii	215	4.6
Kauai	215	12.8
Maui	216	5.7
Molokai and Lanai	216	11.2
Oahu	1003	6.7
Sex		
Female	1026	7.6
Male	839	5.8
Age		
18-24	204	1.1
25-34	468	3.6
35-44	455	3.1
45-54	233	11.2
55-64	226	13.1
65+	279	15.2
Race		
Caucasians	667	4.0
Filipinos	217	7.9
Hawaiian or Part-Hawaiian	338	7.9
Japanese	462	8.6
Other	181	6.4

1 Unweighted sample size used as the demonimator for each estimate.

2 Percents weighted to be representative of the age, sex and race distribution of Hawaii.

IV. Appendices

A. References
B. Definitions
C. Questionnaire

A. References

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B. Definitions

Seatbelt Nonuse: "Sometimes, seldom, or never use seatbelts.

Hypertension: Survey respondents were defined as hypertensive if: 1) they were told more than once that their blood pressure is high, 2) they were on medication at the time, or 3) they reported that their blood pressure is still high.

Sedentary Lifestyle: No physical activity or physical activity less than three times a week or less than 20 minutes per occasion.

Overweight: Twenty percent or more above "ideal weight". Ideal weight is defined as the "mid-value of a medium frame person from the 1959 Metropolitan Life Insurance Height/Weight tables.

Cigarette Smoking: Current regular smoker ("ever smoked 100 cigarettes and smokes regularly now").

Acute Drinking (also referred to as Binge Drinking): Five or more drinks on an occasion, one or more times during the past month.

Chronic Drinking: 60 or more drinks during the past month.

Drinking and Driving: Driving after having too much to drink, one or more times during the past month.

1988 Behavioral Risk Factor Questionnaire

HAWAII

FIPS STATE CODE	STRATUM CODE	PSU NUMBER	RECORD NUMBER	DATE OF INTERVIEW MM DD YY	ID
15 (1-2)	(3)	(4-8)	(9)	(10-15)	(16-17)

HELLO. I'm _____ calling for the State Health Department. We're doing a study of the health practices of Hawaii residents. Your number has been chosen randomly by the Health Department to be included in the study, and we'd like to ask some questions about things people do which may affect their health.

Is this Area Code 808 (18-20) Prefix _____ (21-23) Suffix _____ (24-25)

No → *Thank you very much, but I seem to have dialed the wrong number. It's possible that your number may be called at a later time.* STOP

Is this a private residence?

No → *Thank you very much, but we are only interviewing in private residences.* STOP

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⊘ Line busy
● No answer

Calling Period	Date/Time	ID #
1 ○○○○		
2 ○○○○		
3 ○○○○		
4 ○○○○		
5 ○○○○		

Appointments

	Today's Date/Time	Spoke With	Ask for	Call Back on Date/Time	ID#
1.					
2.					
3					

Comments:

Refusals

	Today's Date/Time	Spoke With	ID#
1st Refusal			
2nd Refusal			

Comments:

Final Disposition of Telephone Call: (26-27)

Edited by: _____

Date: __/__/__

DOH/HPEO 2M

Our study requires that we interview only one person who lives in your household. How many members of your household, including yourself, are 18 years of age or older? (28) If "1" page 2

How many are men and how many are women? Men (29) Women (30)

Who is the oldest man who presently lives in this household?
Who is the next oldest man who presently lives in this household?
Etc.

Who is the oldest woman who presently lives in this household?
Who is the next oldest woman who presently lives in this household?
Etc.

Suffix: __ __ __ __

Last digit of phone number

Number of Adults in Household	0	1	2	3	4	5	6	7	8	9
1	1	1	1	1	1	1	1	1	1	1
2	2	1	2	1	2	1	2	1	2	1
3	3	1	2	3	1	2	3	1	2	X
4	1	2	3	4	1	2	3	4	X	X
5	2	3	4	5	1	2	3	4	5	1
6	5	6	1	2	3	4	X	X	X	X
7	2	3	4	5	6	7	1	X	X	X
8	8	1	2	3	4	5	6	7	X	X

The person in your household that I need to speak with is _____ If "you" page 3

To correct respondent: Hello. I'm _____ calling for the State Health Department. I'm a member of a special research team. We're doing a study of Hawaii residents regarding their health practices and day-to-day living habits. You have been randomly chosen to be included in the study from among the adult members of your household.

The interview will only take a short time, and all the information obtained in this study will be confidential. First, I'd like to begin by asking you about using seat belts.....

SECTION A: SEAT BELTS

1. How often do you use seat belts when you drive or ride in a car?

Would you say: PLEASE READ (31)

a. Always 1
b. Nearly Always 2
c. Sometimes 3
d. Seldom 4
OR
e. Never 5

DO NOT READ THESE RESPONSES

Don't know/Not sure 7
Never drive or ride in a car..... 8
Refused 9

SECTION B: HYPERTENSION

These next questions are about hypertension or high blood pressure:

2. Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure?

PROBE FOR DOCTOR, NURSE OR OTHER HEALTH PROFESSIONAL (32)

a. No, GO TO SECTION C (p.5) 1
b. Yes, by a doctor 2
c. Yes, by a nurse 3
d. Yes, by other health professional 4
Don't know/Not sure GO TO SECTION C (p.5).... 7
Refused GO TO SECTION C (p.5) ... 9

3. Have you been told on more than one occasion that your blood pressure was high, or have you been told this only once? (33)

a. More than once 1
b. Only once 2
Don't know/Not sure 7
Refused 9

4. Is any medicine currently prescribed for your high blood pressure? (34)

a. Yes 1
b. No, GO TO Q 6 2
Don't know/Not sure, GO TO Q 6 7
Refused, GO TO Q 6 9

5. Are you currently taking medicine for your high blood pressure? (35)

PROBE FOR "ALL OR MOST OF THE TIME" OR "ONLY OCCASIONALLY" IF NECESSARY. IF ANSWER IS "YES", USE "YES ALL OR MOST OF THE TIME"

a. Yes, all or most of the time 1
b. Yes, only occasionally 2
c. No 3
Don't know/Not sure 7
Refused 9

6. As far as you know, is your blood pressure presently normal--or under control--or is it still high?

PLEASE NOTE: NORMAL OR UNDER CONTROL INCLUDES "RETURNED TO NORMAL" AND "NO LONGER HAVE HIGH BLOOD PRESSURE" (36)

a. Normal 1
b. Under control 2
c. Still high 3
Don't know/Not sure 7
Refused 9

SECTION C: EXERCISE

The next few questions are about exercise, recreation, or physical activities other than your regular job duties.

7. During the past month, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise? (37)

   a. Yes 1

   b. No, GO TO SECTION D (p.8) 2

   Don't know/Not sure, GO TO SECTION D (p.8).. 7

   Refused, GO TO SECTION D (p.8) 9

8. What type of physical activity or exercise did you spend the most time doing during the past month? (38-39)

   a. ACTIVITY ..... __ __

   SEE CODING LIST A

   Refused, GO TO Q 13 (p.6) 9 9

   _____
   Activity

06

ASK QUESTION 9 ONLY IF ANSWER TO QUESTION 8 IS RUNNING, JOGGING, WALKING, OR SWIMMING, ALL OTHERS, GO TO QUESTION 10 (p.6).

---

9. How far did you usually walk/run/jog/swim? (40-42)

   a. Miles and tenths ..... __ __.__

   SEE CODING LIST B IF RESPONSE IS NOT IN MILES AND TENTHS

   Don't know/Not sure 7 7.7

   Refused 9 9.9

10. How many times per week or per month did you take part in this activity during the past month? (43-45)

    a. Times per week ..... 1 __ __

    b. Times per month ..... 2 __ __

    Don't know/Not sure 7 7 7

    Refused 9 9 9

11. And when you took part in this activity, for how many minutes or hours did you usually keep at it? (46-48)

    a. Hours & Minutes ..... __:__ __

    Don't know/Not sure 7:7 7

    Refused 9:9 9

12. Was there another physical activity or exercise that you participated in during the last month? (49)

    a. Yes 1

    b. No, GO TO SECTION D (p.8) 2

    Don't know/Not sure, GO TO SECTION D (p.8).. 7

    Refused, GO TO SECTION D (p.8) 9

13. What other type of physical activity gave you the next most exercise during the past month? (50-51)

    a. Activity ..... __ __

    SEE CODING LIST A

    Refused, GO TO SECTION D (p.8) 9 9

    _____
    Activity

ASK QUESTION 14 ONLY IF ANSWER TO QUESTION 13 IS RUNNING, JOGGING, WALKING, OR SWIMMING, ALL OTHERS GO TO QUESTION 15

14. How far did you usually walk/run/jog/swim? (52-54)

a. Miles and tenths ..... __ __.__

SEE CODING LIST B IF RESPONSE IS NOT IN MILES AND TENTHS

Don't know/Not sure 7 7.7

Refused 9 9.9

15. How many times per week or per month did you take part in this activity? (55-57)

a. Times per week ..... 1 __ __

b. Times per month ..... 2 __ __

Don't know/Not sure 7 7 7

Refused 9 9 9

16. And when you took part in this activity, for how many minutes or hours did you usually keep at it? (58-60)

a. Hours & Minutes ..... __:__ __

Don't know/Not sure 7:7 7

Refused 9:9 9

SECTION D: DIET

17. About how much do you weigh without shoes? (61-63)

a. WEIGHT ..... __ __ __ Pounds

Don't know/Not sure 7 7 7

Refused 9 9 9

18. About how tall are you without shoes? (64-66)

a. HEIGHT ..... __/__ __ Ft/Inches

Don't know/Not sure 7 7 7

Refused 9 9 9

19. Are you now trying to lose weight? (67)

a. Yes 1

b. No, GO TO Q 22 (p.9) 2

Refused, GO TO Q 22 (p.9) 9

20. Are you eating fewer calories to lose weight? (68)

a. Yes 1

b. No 2

Don't know/Not sure 7

Refused 9

21. Have you increased your physical activity to lose weight? (69)

a. Yes 1

b. No 2

Don't know/Not sure 7

Refused 9

22. How often do you usually add salt to your food at the table?

Would you say: PLEASE READ (70)

a. Most of the time 1
b. Sometimes 2
c. Rarely 3
OR
d. Never 4
Don't know/Not sure 7
Refused 9

22a. How often do you usually add shoyu or fish sauce to your food at the table?

Would you say: (189)

a. Most of the time 1
b. Sometimes 2
c. Rarely 3
OR
d. Never 4
Don't know/Not sure 7
Refused 9

22b. How often do you eat foods that are high in salt?

Would you say: (190)

a. Most of the time 1
b. Sometimes 2
c. Rarely 3
OR
d. Never 4
Don't know/Not sure 7
Refused 9

23. Overall, would you say your diet is high, medium or low in fiber? (71)

a. High 1
b. Medium 2
c. Low 3
Don't know/Not sure 7
Refused 9

24. Overall, would you say your diet is high, medium, or low in fat? (72)

a. High 1
b. Medium 2
c. Low 3
Don't know/Not sure 7
Refused 9

SECTION E: TOBACCO USE

Now, I would like to ask you a few questions about tobacco products.

25. Have you smoked at least 100 cigarettes in your entire life? (73)

100 CIGARETTES = 5 PACKS

a. Yes 1
b. No, GO TO Q 29 (p.12) 2
Don't know/Not sure, GO TO Q 29 (p.12) 7
Refused, GO TO Q 29 (p.12) 9

26. Do you smoke cigarettes now? (74)

a. Yes 1
b. No, GO TO Q 29 (p.12) 2
Refused, GO TO Q 29 (p.12) 9

27. On the average, about how many cigarettes a day do you now smoke? (75-76)

1 PACK = 20 CIGARETTES

a. Number of cigarettes ..... __ __
b. Don't smoke regularly 8 8
Refused 9 9

28. Have you stopped smoking for a week or more sometime during the past year? (77)

a. Yes 1
b. No 2
Refused 9

29. Have you ever used or tried any smokeless tobacco products such as chewing tobacco or snuff?

PROBE FOR CHEWING TOBACCO, SNUFF, OR BOTH (78)

a. Yes, chewing tobacco 1
b. Yes, snuff 2
c. Yes, both 3
d. No, neither, GO TO SECTION F (p.13) 4
Don't know/Not sure, GO TO SECTION F (p.13). 7
Refused, GO TO SECTION F (p.13) 9

30. Do you currently use any smokeless tobacco products such as chewing tobacco or snuff?

PROBE FOR CHEWING TOBACCO, SNUFF, OR BOTH (79)

"Yes" INCLUDES OCCASIONAL USE

a. Yes, chewing tobacco 1
b. Yes, snuff 2
c. Yes, both 3
d. No, neither 4
Don't know/Not sure 7
Refused 9

SECTION F: ALCOHOL CONSUMPTION

These next few questions are about the use of beer, wine, or liquor--all kinds of alcoholic beverages that people drink at meals, special occasions, or when just relaxing.

31. Have you had any beer, wine or liquor during the past month, that is, since _____? (80)

a. Yes	1
b. No, GO TO SECTION G (p.16)	2
Refused, GO TO SECTION G (p.16)	9

32. During the past month, how many days per week or per month did you drink any beer? (81-83)

a. Days per week	1 _ _
b. Days per month	2 _ _
c. Never or none, GO TO Q 34 (p.14)	8 8 8
Don't know/Not sure, GO TO Q 34 (p.14)	7 7 7
Refused, GO TO Q 34 (p.14)	9 9 9

33. On the days when you drank beer, about how many beers did you drink on the average? (84-85)

a. Number of beers	_ _
Don't know/Not sure	7 7
Refused	9 9

34. Also, during the past month, how many days per week or per month did you drink any wine? (86-88)

a. Days per week	1 _ _
b. Days per month	2 _ _
c. Never or none, GO TO Q 36	8 8 8
Don't know/Not sure, GO TO Q 36	7 7 7
Refused, GO TO Q 36	9 9 9

35. On the days when you drank wine, about how many glasses of wine did you drink on the average? (89-90)

a. Number of glasses of wine	_ _
Don't know/Not sure	7 7
Refused	9 9

36. And, during the past month, about how many days per week or per month did you have any liquor to drink, such as vodka, gin, rum, or whiskey? (91-93)

a. Days per week	1 _ _
b. Days per month	2 _ _
c. Never or none, GO TO Q 38 (p.15)	8 8 8
Don't know/Not sure, GO TO Q 38 (p.15)	7 7 7
Refused, GO TO Q 38 (p.15)	9 9 9

37. On the days when you drank any liquor, about how many drinks did you have on the average? (94-95)

a. Number of drinks	_ _
Don't know/Not sure	7 7
Refused	9 9

38. Considering all types of alcoholic beverages, that is beer, wine, and liquor, as drinks, how many times during the past month did you have 5 or more drinks on an occasion? (96-97)

a. Number of times ..... — —

b. None 8 8

Don't know/Not sure 7 7

Refused 9 9

39. And during the past month, how many times have you driven when you've had perhaps too much to drink? (98-99)

a. Number of times ..... — —

b. None 8 8

Don't know/Not sure 7 7

Refused 9 9

SECTION G: PREVENTIVE HEALTH PRACTICES

Some people visit a doctor for a routine checkup, even though they are feeling well and have not been sick.

40. About how long has it been since you last visited a doctor for a routine checkup? (100)

PLEASE READ

Was it:

a. Within the past year .....(0 TO 12 MONTHS AGO) 1

b. Within the past two years ...(13 TO 24 MONTHS AGO) 2

c. Within the past five years ..(25 TO 60 MONTHS AGO) 3

OR

d. More than five years ago .....(61+ MONTHS AGO) 4

Don't know/Not sure 7

Never 8

Refused 9

These next questions are about blood cholesterol, which is a fatty substance found in the blood.

41. Have you ever had your blood cholesterol checked? (101)

a. Yes 1

b. No, GO TO Q 48 (p.18) 2

Don't know/Not sure, GO TO Q 48 (p.18) 7

Refused, GO TO Q 48 (p.18) 9

42. About how long has it been since you last had your blood cholesterol checked? (102)

PLEASE READ

Was it:

a. Within the past year .....(0 TO 12 MONTHS AGO) 1

b. Within the past two years ..(13 TO 24 MONTHS AGO) 2

c. Within the past five years .(25 TO 60 MONTHS AGO) 3

OR

d. More than five years ago .....(61+ MONTHS AGO) 4

Don't know/Not sure 7

Refused 9

43. Have you ever been told your blood cholesterol level, in numbers? (103)

a. Yes 1

b. No, GO TO Q 45 2

Don't know/Not sure, GO TO Q 45 7

Refused, GO TO Q 45 9

44. What is your blood cholesterol level? (104-106)

a. RECORD THE NUMBER ..... ___

b. Don't know/Not sure 7 7 7

Refused 9 9 9

45. Have you ever been told by a doctor or other health professional that your blood cholesterol is high? (107)

a. Yes 1

b. No 2

Don't know/Not sure 7

Refused 9

46. Are you now under the advice of a doctor to reduce your blood cholesterol or blood fat level? (108)

a. Yes 1

b. No, GO TO Q 48 (p.18) 2

Don't know/Not sure, GO TO Q 48 (p.18) 7

Refused, GO TO Q 48 (p.18) 9

47. Did the doctor:

47a. --prescribe a medication to lower your blood cholesterol? (109)

a. Yes 1

b. No 2

Don't know/Not sure 7

Refused 9

47b. --provide you a low fat or low cholesterol diet? (110)

a. Yes 1

b. No 2

Don't know/Not sure 7

Refused 9

47c. --refer you to a dietitian, nutritionist, or nurse to help you reduce the fat or cholesterol in your diet? (111)

a. Yes 1

b. No 2

Don't know/Not sure 7

Refused 9

48. Next, I'd like to ask you about diabetes, sometimes called sugar diabetes. Have you ever been told by a doctor that you have diabetes? (112)

a. Yes 1

b. No 2

Don't know/Not sure 7

Refused 9

Next I'd like to ask you about getting your blood pressure checked.

49. About how long has it been since you last had your blood pressure taken by a doctor or other health professional? (113)

PLEASE READ

Was it:

a. Within the past year .....(0 TO 12 MONTHS AGO) 1

b. Within the past two years ...(13 TO 24 MONTHS AGO) 2

c. Within the past five years ..(25 TO 60 MONTHS AGO) 3

OR

d. More than five years ago .....(61+ MONTHS AGO) 4

Don't know/Not sure, GO TO Q 52 (p.20) 7

Never, GO TO Q 52 (p.20) 8

Refused, GO TO Q 52 (p.20) 9

50. Blood pressure is usually given as one number over another. Were you told what your blood pressure was in numbers? (114)

a. Yes 1

b. No, GO TO Q 52, (p.20)..... 2

Don't know/Not sure, GO TO Q 52, (p.20)..... 7

Refused, GO TO Q 52, (p.20)..... 9

51. What was your blood pressure, in numbers? (115-120)

a. RECORD THE NUMBER ..... ___ ___ ___ / ___ ___ ___

b. Don't know/Not sure ..... 7 7 7 / 7 7 7

Refused ..... 9 9 9 / 9 9 9

SECTION H: DEMOGRAPHICS

These next few questions ask for a little more information about yourself.

52. How old were you on your last birthday? (121-122)

a. CODE AGE IN YEARS ..... ___ ___

Don't know/Not sure 0 7

Refused 0 9

53. What is your race? (191-192)

Would you say: PLEASE READ

a. Caucasian 11

b. Hawaiian/Part Hawaiian 32

c. Chinese 33

d. Filipino 34

e. Japanese 35

f. Korean 36

g. Samoan/Tongan 37

h. Black 20

i. Aleutian/Alaskan 40

j. Other specify _____ 50

k. Do not know/Not sure 78

Refused 99

54. Are you of Hispanic origin such as Mexican American; Latin American, Puerto Rican, or Cuban? (124)

a. Yes 1

b. No 2

Don't know/Not sure 7

Refused 9

55. What is the highest grade or year of school you completed?

READ ONLY IF NECESSARY (125)

a. Eighth Grade or Less 1
b. Some High School 2
c. High School Grad or GED Certificate 3
d. Some Technical School 4
e. Technical School Graduate 5
f. Some College 6
g. College Graduate 7
h. Post Grad or Professional Degree 8
Refused 9

56. Are you currently: PLEASE READ (126)

a. Employed for wages 1
b. Self employed 2
c. Out of work for more than 1 year 3
d. Out of work for less than 1 year 4
e. Homemaker 5
f. Student 6
OR
g. Retired 7
Refused 9

57. And are you: PLEASE READ (127)

a. Married 1
b. Divorced 2
c. Widowed 3
d. Separated 4
e. Never been married 5
OR
f. A member of an unmarried couple 6
Refused 9

58. Which of the following categories best describes your annual household income from all sources?

PLEASE READ (128)

a. Less than 10,000 1
b. 10 to 15,000 2
c. 15 to 20,000 3
e. 20 to 25,000 4
e. 25 to 35,000 5
f. 35 to 50,000 6
OR
g. Over 50,000 8
Don't know/Not sure 7
Refused 9

59. INTERVIEWER: INDICATE SEX OF RESPONDENT ASK IF NECESSARY (129)

a. Male, GO TO Q 63 1

b. Female 2

INTERVIEWER: ASK THIS QUESTION ONLY OF FEMALES BETWEEN 18 AND 45 YEARS OF AGE, OTHERWISE GO TO QUESTION 63

60. To your knowledge, are you now pregnant? (130)

a. Yes 1

b. No, GO TO Q 62 2

Don't know/Not sure, GO TO Q 62 7

Refused, GO TO Q 62 9

66

61. During what month is your baby due? (131-132)

a. CODE MONTH, GO TO Q 63 ..... __ __

CODE MONTH:
01=Jan, 02=Feb, etc.

Don't know/Not sure, GO TO Q 63 ..... 7 7

Refused, GO TO Q 63 ..... 9 9

62. Are you currently taking birth control pills? (133)

a. Yes 1

b. No 2

Don't know/Not sure 7

Refused 9

63. How many telephone numbers will reach this household, including the number I used today?

DIFFERENTIATE BETWEEN TELEPHONE NUMBERS AND TELEPHONE SETS IF NECESSARY. INCLUDE ALL TELEPHONE NUMBERS THAT CAN REACH HOUSEHOLD (134)

a. Total Telephone Numbers ..... __

MODULE 6: AIDS

And finally, I would like to ask you some questions about AIDS and the AIDS virus infection.

1. Compared to most people, how much would you say you know about AIDS? (166)

PLEASE READ

Would you say:

a. A lot 1

b. Some 2

c. A little 3

OR

d. Nothing 4

Don't know/Not sure 7

Refused 9

2. What are you chances of getting the AIDS virus? (167)

PLEASE READ

Would you say:

a. High 1

b. Medium 2

c. Low 3

OR

d. None 4

Don't know/Not sure 7

Refused 9

3. Has concern about AIDS changed your life in any way? (168)

a. Yes 1

b. No 2

Don't know/Not sure 7

Refused 9

4. Have you had your blood tested for the AIDS virus? (169)

a. Yes 1

b. No, GO TO Q6 2

Don't know/Not sure, GO TO Q6 7

Refused, GO TO Q6 9

5. Was it when you donated blood or was it some other time? (170)

a. When donated blood 1

b. Some other time 2

c. Both 3

Don't know/Not sure 7

Refused 9

6. Have you ever personally known anyone with the AIDS virus infection or with AIDS? (171)

a. Yes 1

b. No 2

Don't know/Not sure 7

Refused 9

7. Do you think a person can get the AIDS virus by:

7a. Donating or giving blood? (172)

a. Yes 1

b. No 2

Don't know/Not sure 7

Do you think a person can get the AIDS virus by:

7b. Working with someone who has the AIDS virus? (173)

a. Yes 1

b. No 2

Don't know/Not sure 7

7c. Eating food that has been handled by a person who has AIDS virus? (174)

a. Yes 1

b. No 2

Don't know/Not sure 7

7d. Sharing plates, forks, or glasses with someone who has the AIDS virus? (175)

a. Yes 1

b. No 2

Don't know/Not sure 7

7e. Using public toilets? (176)

a. Yes 1

b. No 2

Don't know/Not sure 7

7f. Sharing needles with someone who has the AIDS virus? (177)

a. Yes 1

b. No 2

Don't know/Not sure 7

7g. Kissing on the cheek someone who has the AIDS virus? (178)

a. Yes 1

b. No 2

Don't know/Not sure 7

Do you think a person can get the AIDS virus by:

7h. Being coughed or sneezed on by someone who has the AIDS virus? (179)

a. Yes 1

b. No 2

Don't know/Not sure 7

7i. Attending school with a child who has the AIDS virus? (180)

a. Yes 1

b. No 2

Don't know/Not sure 7

7j. Mosquitos or other insects? (181)

a. Yes 1

b. No 2

Don't know/Not sure 7

7k. Having sex with a person who has the AIDS virus? (182)

a. Yes 1

b. No 2

Don't know/Not sure 7

8a. How likely do you think it is that a person will get the AIDS virus from receiving a blood transfusion? (183)

Would you say:

a. Very likely 1

b. Somewhat likely 2

c. Somewhat unlikely 3

OR

d. Very unlikely 4

Don't know/Not sure 7

8b. How likely do you think it is that a person will get the AIDS virus from kissing - with exchange of saliva - a person who has the AIDS virus? (184)

Would you say:

a. Very likely 1

b. Somewhat likely 2

c. Somewhat unlikely 3

OR

d. Very unlikely 4

Don't know/Not sure 7

9. Do you have children aged 10 through 17? (185)

a. Yes 1

b. No (GO TO Q11a, p.29)..... 2

Refused 9

10. Have you ever discussed AIDS with any of these children? (186)

a. Yes 1

b. No 2

Don't know/Not sure 7

Refused 9

11. Would you permit them to attend classes with a child who has the AIDS virus? (187)

a. Yes 1

b. No 2

Don't know/Not sure 7

Refused 9

GO TO CLOSING STATEMENT

11a. If you had children of school age, would you permit them to attend classes with a child who has the AIDS virus? (188)

a. Yes 1

b. No 2

Don't know/Not sure 7

Refused 9

CLOSING STATEMENT

That's my last question. Let me emphasize that your answers cannot be identified with your name. Everyone's answers will be combined to give us information about the health practices of people in Hawaii. Thank you very much for your time and cooperation.

John C. Lewin, M.D.
Director of Health

John Waihee
Governor

DOH HPEB 6M, 2/91